PYTHAGORAS
A Life
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ROUTLEDGE & KEGAN PAUL
London, Henley and Boston

First published in 1979
by Routledge & Kegan Paul Ltd
39 Store Street, London WC1E 7DD,
Broadway House, Newtown Road,
Henley-on-Thames, Oxon RG9 1EN and
9 Park Street, Boston, Mass. 02108, USA
Set in Palatino
Photoset and printed in Great Britain by
Lowe & Brydone Printers Ltd
Thetford, Norfolk
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British Library Cataloguing in Publication Data

Gorman, Peter

Pythagoras.
1. Pythagoras 2. Philosophers – Greece – Biography
182'.2 B243 78-40701

ISBN 0 7100 0006 5

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INTRODUCTION

A readable biography of Pythagoras is long overdue. Although a great deal has been written about this sage's theories no satisfactory account of his life exists in any language. One must of course exclude from this judgment the three ancient biographies upon which any attempt at a biography of Pythagoras must necessarily be based, yet even these works of ancient scholarship are in many ways inadequate. Before these inadequacies are discussed one should turn to the productions of the moderns to see how they have handled the subject.

It is irrelevant here to list the various attempts at a Pythagorean biography, but there have not been many, although Thomas Taylor translated Iamblichus' *Life of Pythagoras* into English in 1818, and Albrecht into German, and Porphyry's biography in English is available in M. Hadas and M. Smith, *Heroes and Gods*, London, 1965. Again in the biographical field the Germans have led the way with the two biographies of Baltzer and Roeth. It was inevitable that nineteenth-century German scholarship would produce at least some biographies of Pythagoras, but they are in no sense compelling achievements. The slim volume of Baltzer and the monumental effort of Roeth, if taken together, offer a dreary, but complementary view of the material relating to the life of Pythagoras. Baltzer's work possesses at least some literary elegance, whilst Roeth's ponderous volumes afford only scholarship. Baltzer, employing a narrative style, gives a simple summary of the ancient subject matter; Roeth, on the other hand, tries to discuss every piece of information relating to Pythagoras, a titanic struggle, since perhaps no other person is mentioned more frequently in the ancient authors than

Pythagoras. This again testifies to his incredible fame in the ancient world. In the modern world he is chiefly remembered for an achievement almost certainly not his: the theorem concerning the hypotenuse and sides in a right-angled triangle.

The present work attempts to maintain a mean between the extremes of the two German biographies and offers an interpretation of Pythagoras which is in the spirit of his ancient biographers; namely, Porphyry and Iamblichus who both flourished in the third century of the Christian era. Thus it might be termed a Neoplatonic interpretation, or rather a Neopythagorean one, as the two ancient biographers mentioned were avowed vegetarians and revivers of many of the features of the teachings of Pythagoras. However, the third ancient biography, that of Diogenes Laertius, who was neither Pythagorean nor Neoplatonist, is in essential agreement with those of Porphyry and Iamblichus so that the present work is also following a tradition dating back beyond the Neoplatonists. In fact, the so-called Neoplatonists were Pythagoreans who interpreted Plato as a Pythagorean. In order to comprehend the Pythagorean philosophy and way of life one must be familiar with the totality of Hellenic religious and philosophical thought. This necessarily entails a knowledge of the period in which our three ancient biographies were written: the third and fourth centuries of the Christian epoch. This no previous writer on Pythagoras possesses to any great degree. We see Pythagoras most distinctly through the eyes of the Pythagorean revival in the late Roman period for it is then that his religious and mystical message is pitted against the various other sects vying for supremacy and dominion over men's minds. Classical authors like Empedokles, Heraclitus, Isocrates and Plato had shown Pythagoras to be a charismatic figure with the typical traits of a guru. Such authors as Apollonius, Porphyry and Iamblichus, the avant-garde of the pagan revival, seized upon these mystical qualities in the Pythagorean legend as a possible counterpoise to other religious figures. I. Lévy in *La Légende de Pythagore de Grèce en Palestine*, Paris, 1927, has suggested parallels between the biographies of Pythagoras and of Christ in the New Testament. He points out similarities between accounts of the birth of Pythagoras and the nativity (p. 306). He alleges that the miraculous cures by Christ are like those of Apollonius of Tyana, a

biographer of Pythagoras and a late Roman copy of him. He traces the parable back to the Pythagorean akousmata and the one told by Pythagoras to Leon of Phlius (p. 308); quotes several akousmata borrowed by the writers of the New Testament; relates the parable of the two roads to heaven and hell and the one concerning the strait gate to Neopythagorean speculations about the letter Y which a Neopythagorean named, oddly enough, Pythagoras likened to a path forming two branches (p. 313). The birth in a manger is like the nativity of Apollonius in a meadow or of Apollo beneath a palm in rustic surroundings; the *Gloria in excelsis* imitates the choir of Apolline swans circling overhead. The good tidings the angel gives to Joseph in a dream of the coming birth are like the words of the Delphic oracle to Mnesarchus, father of Pythagoras, about the conception of the sage (p. 297). He notices the echoes of the tale of Pythagoras and the fishermen in similar stories about Christ (p. 301). He says (p. 300) that John the Baptist plays the role of Zaratas the Babylonian who purified Pythagoras in water after a forty-day fast, Pythagoras ascended bodily into heaven, just as Empedokles and Apollonius, were to do, an ascension imitated by New Testament writers (pp. 64 ff.) Lévy quotes numerous other parallels, some of which are quite convincing, others not. Thus there is a definite purpose behind the biographies of Iamblichus and Porphyry, especially the latter who was notoriously anti-Christian. Probably Porphyry incorporated his knowledge of these similarities between the story of Pythagoras and the New Testament into his voluminous work, *Against the Christians*, composed in Sicily in A.D. 270, the year of the death of Plotinus, who according to von Harnack (Porphyrius, *Gegen die Christen*, Berlin, 1916) may have inspired the work.

This polemical streak in the ancient biographies certainly cannot be ignored for it exaggerates the mystical and miraculous at the expense of Pythagoras the thinker. However, those writers who have interpreted Pythagoras as a pure philosopher with a rational system have overlooked the fact that the Pythagorean philosophy is basically mystical and intuitive, rather than scientific and rationalistic. It is rational because it offers arguments for its mystical conclusions and does not rely on faith or credulousness like revealed religion; and yet it is irrational or suprarational in its insistence on the reality of the unseen as opposed to the visible, whether these invisibles be the

music of the spheres or the cosmos of divine numbers or the ecstatic vision of the One. This triad of viewless reality embraces the mystical worlds of Pythagoras, Plato and Plotinus. It is this continuity and dynamicism of Pythagoras' message which is neglected by contemporary scholarship.

The ancient material relating to the life of Pythagoras can be divided into three categories. The first concerns the writers who mention Pythagoras and who flourished before the time of Aristotle. These authors are as follows: Empedokles, Heraclitus, Ion, Xenophanes, Herodotus, Isocrates and Plato. This list is impressive for no other ancient person was so often mentioned by posterity; yet some scholars have the temerity to state that we know nothing certain about Pythagoras! If we know nothing of Pythagoras then we certainly are in the dark about Alexander or Caesar or, in fact, any ancient individual. Other scholars allege that we have no contemporary witness to the accomplishments of Pythagoras. But this overlooks the testimony of both Heraclitus and Empedokles who certainly lived within the period covered by Pythagoras' extremely long life (he was ninety-nine when he died, according to one reliable chronology). Both of these eyewitnesses testify to the twin features inherent in the Pythagorean myth: his love of learning and his miraculous powers. Heraclitus is critical of Pythagoras' polymathy and hints that he is a charlatan, whilst Empedokles eulogizes his master (for according to ancient authority Empedokles heard the words of Pythagoras the teacher) in the following verses of his immortal poem, *The Purifications*:

> There was among them a man who knew a vast amount,
> who possessed in fact a very great wealth of understanding,
> and especially was he capable of all sorts of wise work, for
> whenever he exerted himself with all his understanding,
> then easily did he see each of all the things that are, in his
> ten or even twenty lives. (Fr. 129, Diels, trans. Cameron.)

Empedokles implicitly refers to the almost magical aura surrounding the life and works of Pythagoras for the 'wise work' certainly includes thaumaturgy and wonders. In fact, Empedokles states that Pythagoras knew more than any man could learn in ten or twenty lives. It is this intelligence of Pythagoras which distinguishes him from other prophets and

sons of the divine: intelligence, learning, memory and other intellectual faculties are central to his message, whereas faith and hope do not figure very eminently. Like the Buddha he converted his followers by producing an inward change in them, yet he held them spellbound, not by threats or admonitions, but by his sheer psychic and intellectual power. He was not essentially a moralist or an ascetic, but a thaumaturge and intellectual who had triumphed over the boredom of pedantry and transformed learning into something mystical. He also had the tremendous advantage over other religious teachers in being a musician of genius who could control both animals and humans by the power of his playing the kithara (the forerunner of the modern guitar). This instrumental genius of Pythagoras accompanied his singing, but the latter does not figure as prominently as his virtuoso playing of stringed instruments. Like Orpheus he had discovered the secret musical correspondences in the cosmos. Surprisingly enough this musical power does not appear as impressive to these early ancient writers who mention him. This is probably due to the fact that all educated Greeks knew how to play the kithara or flute or both.

Xenophanes, Herodotus and Isocrates stress the religious character of Pythagoras. The theory of reincarnation is mentioned by Xenophanes, whilst Herodotus refers to both immortality and reincarnation. Isocrates introduces Pythagoras as an initiate in many of the oriental religions. He underwent these initiations not to gain favour from the gods, for every Hellene knew that the gods cannot be bribed by ritual and external action, but to gain fame amongst men. It is this fame of Pythagoras which Isocrates stresses even to the point where the sage is tacitly transmuted into a sophist whose bruited renown wins him many followers and pupils amongst the youth of the Hellenic cities. Likewise Plato testifies to the influence of Pythagoras in the field of practical conduct and the creation of a way of life which attracted many followers. What this way of life was Plato does not tell us, yet elsewhere in the *Republic* he mentions the Pythagoreans with reference to musical theory and the perception of the harmonic intervals so that he may have external sources for the musical content in the education and way of life of the Pythagoreans. Plato explicitly stresses the

need for a mathematization of the harmonic intervals, an inspiration he may have derived from the historical Pythagoras. In any case, Plato is the first to discuss Pythagoras or the Pythagoreans in a musical context.

The second period of Hellenic literary history important for material relevant for the biography of Pythagoras is that stretching from the late fourth century B.C. to the first century B.C. This embraces roughly what has been termed the Hellenistic era. It evinces a growing scepticism towards the figure of Pythagoras and an increasing rationalization of his teachings. It was a materialistic age and its writings demonstrate a Hellenism in decay and falling away from the acme of classical perfection. In many ways it is akin to the agnosticism and cynicism of modern materialism. Apart from the followers of Plato and his Academy who retained some of the mystical doctrines of the Pythagoreans, such as Speusippus, who followed the Pythagoreans in adopting number as the supreme metaphysical reality, the philosophies of the Hellenistic Age were either materialistic and behaviouristic, such as the Peripatetics and the Stoics, or overtly sceptical and cynical, such as the followers of Pyrrho and Diogenes. The Pythagoreans in this age became the objects of ridicule, and Pythagoras himself was treated as a mountebank who deceived his followers. Even professed Pythagoreans like Aristoxenus who was in touch with the remnants of a Pythagorean community in Tarentum, tried to rationalize the mystical beliefs of Pythagoras. According to Aristoxenus Pythagoras was not a vegetarian and ate all meats except those of the ox and sheep. Likewise Aristoxenus rejects the Pythagorean doctrine of psychic immortality, substituting for it a theory of the psyche as a harmony of the body.

Aristotle is our most important informant of this period concerning the theories of the Pythagoreans. Strangely enough in his extant writings he does not mention Pythagoras by name (except once in the *Metaphysics* which dates him as a contemporary of Alcmaeon). Instead Aristotle refers to the 'so-called Pythagoreans'. Apart from a great deal of metaphysical theory which Aristotle attributes to these anonymous Pythagoreans in his extant writings, one can also glean a lot of useful information concerning the life of Pythagoras from the fragments of Aristotle's lost works preserved for us in later writers. In his lost

work *Concerning the Pythagoreans* Aristotle has a great deal of information about the miraculous powers of Pythagoras. For instance, from Aristotle come the marvel of Pythagoras speaking with the Daunian bear and many of his predictions which came true. Aristotle also alludes to the belief of Pythagoras' followers that their teacher was the incarnation of a god, the Hyperborean Apollo. One must also bear in mind that Apollo was the supreme god of the Pythagoreans, the name of the One or mystical monad. The Hyperborean strain in the Pythagoras legend is extremely important for it is the hub of the mystical energies which haloed the figure of Pythagoras and made him appear more than man. The Hyperboreans (literally, the dwellers beyond the north wind) were a mythical folk who dwelt in the far north of the inhabited world. They were a particularly pious and happy people who enjoyed the presence of the gods and were especially loved by Apollo. Deciding to erect a temple to that god, the Hyperboreans dispatched the priest of Apollo, Abaris, to the south in order to collect gifts for the dedication and building of the Apolline temple. On this mission Abaris came to Pythagoras with a wondrous arrow which acted as a sort of compass and flying machine. Of course, Abaris and the Hyperboreans were not only mentioned by Aristotle. The Homeric hymns, Pindar and Plato also refer to them. But it was the testimony of Aristotle which first linked them with Pythagoras. Thus in Aristotle we meet with many fantastic episodes in the life or legend of Pythagoras which later Neoplatonic biographers played up. It is also interesting to notice that miraculous features antedate both the New Testament and the Neoplatonic biographies, refuting the theories often heard that the later lives of Pythagoras were modelled on the story of the Gospels and the life of Apollonius.

Another useful source for the Pythagoras legend from the Hellenistic area is Heraclides Ponticus who was primarily a follower of the Platonic Academy, but who also adopted some Aristotelian ideas. He wrote many dialogues concerned with the supernatural and was completely under the spell of the legend of Pythagoras. He even bribed somebody to fake the appearance of a serpent at his burial in order that he might appear to be a god or, at least, a daimon, for the snake symbolized deification and its epiphany near a dead man meant that the deceased had

become a hero or daimon, a lot superior to that of mere mortals. Appropriately Porphyry in his life of Plotinus introduces the snake-motif in order to show that the Pythagorean Plotinus had become a daimon. Heraclides has been termed an untrustworthy source, and, indeed, he bears many of the stigmas of the charlatan. He was probably the innovator who transformed Abaris' arrow into a flying machine. From Heraclides we also have the dialogue of Pythagoras with the tyrant of Phlius, Leon, in which Pythagoras stated that the spectators at the Olympic Games are more important than the actual competitors. This is a parable of life: theory or contemplation is more important than action.

Other Hellenistic authors who wrote on the life and times of Pythagoras include Callimachus, Hermippus and Dicaearchus. Most of Callimachus' poetry has been lost, but the fragments which survive are tantalizing enough. In Callimachus Pythagoras appears an an extraordinary human being, the reincarnation theme being featured in one of the fragments. It is a Pythagoras who recollects that he had been the Homeric hero Euphorbus who was killed by Menelaus before Troy. This idea of 'anamnesis' or the recollection of one's previous incarnations is chiefly associated with the name of Plato, but this theme of Pythagoras recollecting his earlier lives certainly belongs to an epoch before Plato. Anamnesis is an early Pythagorean doctrine, most likely enunciated by the master himself to vindicate his superhuman powers. Recollection is also a common enough idea in oriental religions. This does not, however, prove any mutual interdependence, but rather that it is a universal phenomenon. It is well known that Pythagoras wanted to visit the Far East, but did not get further than Persia. The same fate awaited Plotinus who wished to meet the Brahmans, but only got as far as Mesopotamia. Callimachus also introduces Euphorbus-Pythagoras as a teacher of geometry, a characteristic not stressed and even neglected by earlier authors.

Timaeus and Dicaearchus are important Hellenistic sources for the political attitudes of Pythagoras and his followers. Of these two Dicaearchus is the more trustworthy because he does not show Pythagoras as a reactionary supporter of aristocracy; instead, he appears as a moderate in Dicaearchus and a sincere reformer. But it is to Aristoxenus that the best information about

Pythagoras' political activity is due. According to von Fritz (*Pythagorean Politics in Southern Italy*, New York, 1940) Aristoxenus was the first to write a proper biography of Pythagoras (p. 7), and in all passages quoted by other authors from Aristoxenus Pythagoras and the Pythagoreans appear as lovers of freedom (p. 16). Pythagoras filled the enslaved Italian cities with a spirit of freedom and caused them to revolt against their tyrannical governments. This picture of Pythagoras and the Pythagoreans is not entirely consistent with many later spurious Pythagorean writings, but it does harmonize with Pythagoras' own eccentric and wayward character. It is noteworthy that he was said to have freed his slave Zalmoxis and made him his friend. Later Pythagoreans like Plotinus and Porphyry also dispensed with having slaves or servants in the name of self-sufficiency and inner freedom. The modern equivalent of this would be to renounce the use of all machines. This is perfectly consistent with the Pythagorean notion that contemplation or 'theoria' is superior to action.

During the first century B.C. in Rome a slow revival of interest in Pythagoras and Pythagoreanism began. A leading figure in this was Nigidius Figulus. Even in the frivolous poet Ovid one discerns a great interest in Pythagoras, especially in his doctrine of reincarnation which accords well with the theme of metamorphosis in Ovid's most famous work. The Romans were interested in Pythagoras because that sage had spent a lot of his life in 'Magna Graecia' or Southern Italy. Also Sicily and Italy were the leading ancient centres of Pythagoreanism. It was to Sicily that Plato came in order to buy the famous Pythagorean book of Philolaus from Archytas, a leading Pythagorean politician and mathematician of the fourth century B.C. Empedokles, the pupil of Pythagoras, had leapt into a Sicilian volcano to prove his godhead, and it was in a ruined city of the Pythagoreans in the vicinity of Rome, that Plotinus had wanted to found 'Platonopolis', the last attempt at founding a Pythagorean community in the Roman Empire. It is not necessary here to discuss the progress of the 'Neopythagoreanism', as German scholars first called it, in the Roman Empire with such figures as Nicomachus and Apollonius; needless to say it culminated in the pagan revival of the fourth century A.D. when there was a widespread resurgence of the ancient religion led by

Julian the Emperor and Iamblichus. A major weapon in the arsenal of the pagan cause was Porphyry's *Against the Christians*, all copies of which Constantine had ordered to be burnt earlier in the fourth century; but this order was abortive for Theodosius II and Valentinian were still burning copies in 448. Julian also wrote an anti-Christian work which survives in fragments. This work of mad dog Porphyry, as his opponents called him, has been described as follows:

> It was a compendium of the arguments advanced by Jews and Greeks in opposition to the spread of the Gospel, and in that capacity it went beyond all other works of its kind in antiquity, if not of all time, for bulk, abundance of learning, thoroughness of treatment, and general effectiveness. (A.B. Hulen, *Porphyry's Work 'Against The Christians'*, Scottdale, 1933.)

It is against such a background that two of the biographies of Pythagoras were composed.

Before turning to the two extant biographies from the pens of Porphyry and Iamblichus, one must examine the life of Pythagoras to be found in the work of Diogenes Laertius who wrote *The Lives of the Philosophers* in either the second or third century A.D. Unlike the writers of the other two biographies Diogenes was not a follower of either Plato or Pythagoras, but probably belonged to the school of Pyrrho or to that of Epicurus. Whatever his philosophical persuasion his life of Pythagoras contains much the same sort of material as the other two. All in all it is a somewhat garbled effort, but has some interesting sources. The most reliable of these is Alexander Polyhistor (first century B.C.) from whom Diogenes borrowed a delineation of the philosophical tenets of Pythagoras. Alexander in his turn owes much of his material to earlier Pythagorean sources. Pythagoras emerges as a dualist whose basic philosophical principles were the monad and the indefinite dyad from which are generated the other numbers which compose all of physical reality. The numbers form points and lines and eventually three-dimensional bodies. There are also some interesting theories concerning astronomy and psychology which may go back to the historical Pythagoras. Diogenes is also interesting in that he ascribes certain writings to Pythagoras whilst the other

biographies are silent on this matter. There is likewise a great deal of miraculous material in the biography of Diogenes. Most noteworthy is the fragment from Heraclides Ponticus which names and discusses the previous avatars of Pythagoras.

Porphyry wrote his biography of Pythagoras some time in the late third century A.D. It is a fairly short fragment, but again has some reliable sources. In fact, it is the most coherent and readable of the three ancient biographies, yet it too suffers from bad arrangement, a congeries of ill-digested facts and a lack of interpretative skill. There are four main components in this biography of Porphyry. The first is some learned biography probably composed in Hellenistic times upon which Porphyry has based many of the more credible incidents he relates. This may have been the biography of Pythagoras written by Aristoxenus. Porphyry's second source is the novel of Antonius Diogenes entitled *The Wonders of Ultima Thule.* From this Porphyry has borrowed many wonders, for Thule was a boreal land associated with the Hyperborean myth. The novel of Antonius is purportedly a description of the journey of the author to marvellous places and narrates many wonders and portents. Third, Porphyry employed the biography of Pythagoras written by the Neopythagorean Nicomachus who also wrote an interesting work on the mathematics of the Pythagoreans. Lastly, Porphyry consulted the *Placita* of Moderatus, another Neopythagorean, who was anxious to demonstrate that Plato and Aristotle and many other Greek philosophers had stolen their ideas from Pythagoras and the Pythagoreans. These sources of Porphyry are better than those of Iamblichus, and Porphyry exhibits a far more critical approach to them than Iamblichus' rather naïve effusions. For instance, Porphyry acknowledges that the teachings of Pythagoras, since they were a closely guarded secret, can never be reconstructed with any certainty. Porphyry also names his sources, something which Iamblichus does not do.

Iamblichus' biography is possibly the worst and least reliable of the three, yet even it has some memorable information. It is by far the longest of the ancient biographies and would have been even more voluminous if it had escaped mutilation in many key passages. Iamblichus is more prolix than either Diogenes or Porphyry and expands his material into a novel

about Pythagoras. If the style had been more lucid and elegant the biography would have been a success, but the problems of form and arrangement are never overcome by Iamblichus. It is not even written in chronological order and contains many irrelevant stories about later Pythagoreans when material relating to Pythagoras is lacking. He does not interpret the facts sufficiently and is too uncritical. He has employed two main sources. The first which accounts for approximately half of the biography is the work of Nicomahus. The other half is based on the writing of Apollonius of Tyana, another Neopythagorean, who in his own life tried to emulate Pythagoras as much as possible. Iamblichus also insinuates many Platonic ideas into the biography, passing them off as genuine thoughts of Pythagoras. This undoubtedly stems from the contention of Moderatus that Plato's thoughts were borrowed from Pythagorus; but there is also another reason. It is related to the pagan revival of the fourth century. Iamblichus, like Porphyry, needs an ancient sage and thaumaturge to counter the rising tide of oriental cults; and after Apollonius of Tyana had failed in the bid for the title, Iamblichus turned to Pythagoras as the source of all wisdom. In the preface to his biography Iamblichus says some rather strange things. He complains that Pythagoreanism has been neglected and falsified by many pseudo-Pythagorean writings, but we have already seen that Neopythagoreanism was a living force and its followers had been extremely active since the first century B.C. Also his complaint about Pythagorean forgeries does not ring true for he quotes these sources very freely himself. The main reason for his preface is to draw the reader's attention to the fact that Pythagoreanism is the 'divine philosophy' and no other stands beside it. It is the contention of Iamblichus that the philosophy of Pythagoras is the universal truth revealed to many sages including Orpheus, Plato, Apollonius of Tyana, Plotinus, and, of course, Iamblichus himself. The biography is only one of a series of monographs on the totality of the Pythagorean philosophy. This encyclopaedia of Pythagorean wisdom was one of the cornerstones of the pagan revival. All polytheistic religions have a dim intuition of the truth manifest only in Pythagoreanism, hence Iamblichus delights in narrating Pythagoras' many initiations into the pagan mysteries of all countries. Iamblichus omits all references

to both monotheistic religions, implying that Pythagoras did not consider monotheism worthy of his attention.

Thus the ancient background to the life of Pythagoras is seen to be a mixture of objectivity with religious and even political controversy. Since the ancient material is so immense one must be selective in a narration of Pythagoras' life. We have a lot of information about Pythagoras, but much of it is unreliable. He stands midway between myth and history, but the situation is not as desperate as it appears to many critics. Even in the historical narratives of the exploits of Alexander the Great many mythical features intrude, and not just in the book of pseudo-Callisthenes, but also in Arrian. One has only to recall the wondrous fountain in the oasis of Siwah, seat of the oracle of Ammon-Zeus. The ancients tended to deify any extraordinary individual so that the myth is in many ways as real as the historical truth, for it had a similar effect upon posterity and influenced the course of history profoundly. The present biography is firmly based on the ancient sources and most of the references in the text refer to those ancient authors who mention or discuss Pythagoras.

ONE

ORIGINS

Samos, where the early years of Pythagoras were spent, is a large, undulating Aegean island opposite the coast of Asia Minor. At its nearest point it is only a few kilometres from Asia, significant for the later development of Pythagoras. Asia Minor or Ionia, as the Greeks called it, was the site of many prosperous Hellenic cities such as Ephesus and Miletus, and beyond Ionia lay the legendary Lydia, realm of Croesus, whose amazing rescue from a pyre was effected by the god Apollo who took the former king, together with his wife and children, to the land of the Hyperboreans, whilst the Persian army seized his capital Sardeis. Beyond the luxurious Lydia stood the bleak landscape of Anatolia. At the time of Pythagoras' birth in the fifty-fourth Olympiad or 569 B.C. these Ionian cities and the islands of Samos and Lesbos enjoyed a freedom and luxury which gave birth to a cultural and scientific renaissance, a brief flowering before it was destroyed by the tyranny of the Persians. The end of Croesus as described by Bacchylides is a symbol of the passing of a beautiful and civilized era. Pythagoras is often described as a primitive shaman or totemistic figure, but this is untenable when one examines the refined and elegant culture of Ionia and Lesbos exemplified in the poetry of Alcaeus and Sappho. Here palaces shine with brass, and banquets with golden trinkets and cups of silver; from ceilings of ivory, myrrh and incense rain down upon the revellers. It was a dream which lasted until the Persian invasion. Luckily this rather barbarous people was confined in the mountains beyond Mesopotamia when Pythagoras was a young man. But the Persian menace overtook him in his later years, and he spent some years of captivity at Babylon. However, Pythagoras profited by his captivity for he was instructed in the religion and philosophy of

the Magoi or the wise men of Persia by Zaratas, a leading Zoroastrian sage; but this was after he had been taught by Thales of Miletus and Pherekydes of Syros and Anaximander likewise of Miletus. These teachers provided Pythagoras with a rational awakening with which he could safely absorb barbarian religiosity without its superstition.

Samos is also fairly close to the Cyclades and the central island of Delos which was the sacred birthplace of the god Apollo and his sister Artemis. This god became the highest symbol of Pythagorean religious thought and was a personal guide to the sage Pythagoras. Pythagoras wandered back and forth between Samos and Asia Minor during the process of his education. Delos too he visited frequently, for that island was the religious and cultural centre of Ionia; and all around were lesser islands which were to fall under the suzerainty of the tyrant of Samos, Polycrates. Thus Samos at the time of Pythagoras was a flourishing state whose capital Samos, located on the western side of the island adjacent to the commercial cities of Asia Minor, was an important entrepôt and a pan-hellenic religious focus with its monumental temple of Hera, queen of the Olympian gods. It is difficult to imagine that the population of the island ever exceeded 100,000 people, although there are exaggerated figures for the city of Samos itself which are in excess of 300,000. The site of the ancient city is not all that large, girdled as it is by the walls of Polycrates which rise from the coastal plain high up the surrounding hills. Today there are no ruins of the sixth century visible above ground except for shattered columns and capitals and a few basalt remains of the theatre high up on the hillside overlooking the site of the ancient harbour. The area has never been properly excavated, but any excavation would not find much for most of the buildings have been demolished by time and the farmers who build their fences from the ruins.

The Cyclopean walls of Polycrates are not the only remaining monument of the ancient city for the aqueduct which that tyrant's engineer, Eupaleinos, drilled through the hills still remains. Its lower entrance is not far from the ancient theatre, and its upper mouth is a vast cavern on the summit of the hills. Thus its length is truly astounding and testimony to the engineering skill of the time. There are other caves too in the

hills surrounding the ancient city, one of which housed Pythagoras for a time as he meditated on the enigma of the universe. From this cavern he taught the Samian youth and developed his habit of silence and retirement which later became a central dogma of his followers. The caverns would also have sheltered the goatherds and the shepherds as they watched over their flocks by night and gazed down at the torchlight processions which wended their way along the sacred road below in the coastal plain towards the temple of Hera. The ancient theatre too, magnificently located, would have overlooked the same scene.

Even though Samos at this time was a rich mercantile city endowed with men of talent it was not the sort of place conducive to an individualist like Pythagoras. For one thing it was ruled by an hereditary aristocracy of merchants whose interest could hardly be termed philosophical. Its navy was fast becoming the most powerful in the Aegean until under the leadership of Polycrates the Samians possessed an empire. This thalassocracy of the Samians did not outlast the treacherous murder of Polycrates at the hands of the Persians, but while it and Polycrates endured, the atmosphere on Samos for Pythagoras became intolerable. The prosperous Samians did not have time to listen to the mystical message of Pythagoras. The horizons of a commercial class are very narrow and it is no wonder that Pythagoras was a perpetual traveller. Pythagoras may have come to despise that little island after visiting Egypt, Babylon and Italy, and it is significant that he did not return to Samos after his departure for Italy. Polycrates himself seems to have been a friend of Pythagoras at first, but later became his enemy. Polycrates, the son of a respected merchant family, whose father, Aiakes, had been priest of Hera, came to power in about 538 B.C. We have already seen that he was a patron of great public works such as the famous wall named after him; yet he was a typical megalomaniac who chained the island of Rhenaia to its neighbour Delos to symbolize his command of the sea. Besides he possessed little foresight and was easily trapped by the Persians. The well known story narrated by Herodotus of how his end had been foretold by the king of Egypt, Amasis, after the tyrant had discovered an emerald seal ring in a fish brought to him by a fisherman, a ring he had thrown into the

sea on the advice of Amasis, is a romantic tale worthy of the *Arabian Nights* and typical of the mythical aura surrounding the characters of the sixth century B.C. Amasis had heard of the continual good fortune of Polycrates who went from victory to victory and believed that the gods had nothing good ultimately in store for such a man. Therefore he wrote to Polycrates advising him to throw away his most precious possession to appease the envy of the gods. Polycrates chose his emerald ring, but it was miraculously returned to him when he discovered it in the fish. When Amasis heard of this he gave up all hope for the safety of Polycrates who, in fact, did meet a grisly end at the hands of the Persian Satrap Oroetes.

The historical and political background to the life of Pythagoras is all-pervasive, for without it that sage would not have had the opportunities for travel and enquiry. Without the commercial and political supremacy of Samos Pythagoras could not have visited Egypt and the Levant, or, at least, his journeys would have been far more arduous. Not only Samos was expanding economically at this time, but the whole of Greece was becoming more prosperous. The Egyptians had granted Hellenic merchants a port of entry for their merchandise, which was called Naucratis. The Greeks also had numerous trading-posts in the Levant. During the centuries prior to the birth of Pythagoras the Hellenes had sent colonies to all the regions of the Mediterranean and even to the Black Sea. Important Hellenic cities had been founded in Magna Graecia or Italy to which Pythagoras later migrated. These cities in Magna Graecia were in many cases more prosperous than the homeland. Names like Sybaris and Syracuse later became proverbial for luxury and wantonness.

Into this Mediterranean world in which Hellenic influences extended far and wide came Pythagoras to imbibe foreign cults and sciences and develop a new mystical view of knowledge. His ancestors according to Iamblichus[1] dwelt in Same near Kephalonia in Northern Greece. The most famous of these, the mythical Ancaeus, son of Zeus, consulted the Delphic oracle which told him to go to an island called Melamphyllon (black-leaved) and there establish a city named after his native town. The words of the oracle are as follows: 'Ancaeus, instead of Same I bid you colonize the island of Samos (now called

Phyllis) which lies in the sea.' Ancaeus obeyed the oracle and founded the city of Samos, being entertained on his way there by the nymphs of Delos. According to Iamblichus both of Pythagoras' parents, Mnemarchus and Pythais, were descended from the mythical hero Ancaeus. None of the other biographies mentions this mythical ancestry for they only state that Pythagoras' father was either a Samian or a Tyrrhenian by birth. According to Porphyry[2] all the ancient authorities agreed that the name of Pythagoras' father was Mnesarchus, but disagreed as to his race. Porphyry is not quite accurate here for already Diogenes Laertius[3] had given the name of Pythagoras' father as Marmakos, an inhabitant of Phlius who fled to Samos as an exile. Likewise Porphyry's form of the name 'Mnesarchus' is different from that of Iamblichus' 'Mnemarchus'. Who is to be trusted? Porphyry undoubtedly for he gives the names of several of his sources among whom is Neanthes. According to Neanthes Pythagoras' father was a Phoenician, a Tyrian, by birth, who gave corn to the Samians in a time of famine and was rewarded with the citizenship of Samos. Mnesarchus later took Pythagoras to Tyre where he was put to school with the Chaldaeans and wise men of Syria. Thus this child prodigy spoke with the wise men in the temples. Neanthes also mentions that other authors believed that Pythagoras' father was a Tyrrhenian, an Etruscan, but does not name his sources. Likewise in Plutarch (*Quaest. Conviv.* 727c) the Pythagorean Lucius, a pupil of Moderatus, insists that Pythagoras was a Tyrrhenian. This idea of a foreign parent for Pythagoras agrees well with the later myth of the sage for he was said to have adopted oriental dress such as trousers. Moreover, volumes have been written about the relationship of Pythagoras with the East, especially India. His barbarian ancestry may also account for the apparent ease with which he associated with the peoples of the Levant for he obviously would have learnt Phoenician from his father. Yet Iamblichus who was himself a Syrian by birth disagrees with all this and is quite insistent on the Hellenic pedigree of his hero. This may be because of Iamblichus' desire to restrict Pythagoreanism to an Hellenic and Egyptian milieu, relatively untainted by the Levant which in his eyes had produced the religious changes in the Roman Empire. However, since Iamblichus has only recourse to mythical sources, it is best

to trust the older authority of Neanthes and the judgment of Porphyry. Perhaps this conflict as to the race of Pythagoras merely indicates that we know nothing about his father at all. To overcome this total scepticism one can only trust the best possible source. It is comforting to reflect that we have at least some opinions as to Pythagoras' parentage, for some ancient authors such as Plotinus refused to reveal their race or the names of their parents. Plotinus' secrecy is stressed by Porphyry in his life of that sage, and he gives no inkling of where Plotinus came from or who his parents were.

Likewise there is a slight conflict as to the occupation of Pythagoras' father, Mnesarchus. Most of the ancient sources state that he was a merchant, a fact which agrees with what we know about Pythagoras' later history; but some say that Mnesarchus was a jeweller or ring-sculptor, as the Greek puts it. This latter story seems a little odd and does not harmonize with a Pythagoras who was familiar with the ships and geography of the Mediterranean. Moreover, in later life Pythagoras condemned the wearing of rings engraved with the images of the gods. Thus the occupation of ring-sculptor for Pythagoras' father may have been an invention of a satirist like Hermippus who sought to discredit the legend of the sage. About Pythagoras' mother we know even less. Iamblichus says[4] that she was originally called Parthenis (the virgin), but after the Delphic oracle informed Mnesarchus that she was about to give birth to a wonderful child he renamed her Pythais in honour of the Pythian Apollo. We also encounter in this birth of Pythagoras a familiar theme: the idea that the child is not of the seed of the father but a son of the god. Apollo apparently secretly visited Pythais and sired the godlike Pythagoras just as the god had engendered Ion, the founder of the Ionian race, and the divine philosopher Plato, not to mention later sages such as Apollonius of Tyana from whom Iamblichus probably borrowed this story. Iamblichus clearly finds this divine parentage for Pythagoras embarrassing for were not sons of gods founders of the rival creeds in the Roman Empire? Iamblichus plays down the Apolline siring, just hinting that Pythagoras may have only been a daimon associated with the astrological circle of Apollo the sun-god or even an inhabitant of the moon who had come to earth to redeem mankind from its error. Iamblichus quotes as

his source for the god Apollo as the father of Pythagoras the following couplet, perhaps invented by Apollonius of Tyana: 'and Pythagoras whom Pythais bore for her beloved, the divine Apollo,/Pythais, who was the most beautiful Samian of all.' This couplet may be from a poem listing the amours of Apollo or a list of the sages of Greece sired by the god prior to the sagacious Apollonius. Such catalogues were common in Hellenistic poetry. In connection with this myth Iamblichus inadvertently lets slip that Pythagoras was born in Sidon in Phoenicia which again suggests that Pythagoras was closely associated with the Levant and that the belief of Neanthes that he was of foreign parentage was not unfounded. But at least Iamblichus shows a healthy scepticism in the face of the Apolline insemination, something which followers of Plato such as Eudoxus and Xenocrates did not when they acclaimed his father Apollo; proof that the later Hellenic thinkers and Pythagoreans were not more superstitious than their illustrious forebears of the fourth century B.C.

Not much is known about the family life of Mnesarchus and Pythais and their famous son. Most of the authorities state that Pythagoras had at least two other brothers whose names were Eunostus and Tyrrhenus according to Porphyry.[5] Diogenes Laertius gives him three brothers, Eunomus, Tyrrhenus and Zalmoxis,[6] but is obviously mistaken in the third, Zalmoxis, who was also rumoured to have been the slave Pythagoras later freed and made his friend. Herodotus even associates this Zalmoxis with a Thracian god and says he had nothing to do with Pythagoras. Porphyry[7] states that Pythagoras visited Italy with his father when he was still almost a child, a visit which may have aroused in Pythagoras the desire to return. This story may be linked to the idea that Mnesarchus was a Tyrrhenian by birth. Porphyry also quotes a strange passage from the bizarre author Antonius Diogenes who wrote a work on the marvels beyond Thule. According to Diogenes[8] Mnesarchus was a Tyrrhenian (an epithet which in Hellenic eyes was almost equivalent to 'pirate') who made frequent voyages. On one of these journeys he came across a miraculous child which lay beneath a pine tree. It had a small reed in in its mouth and fed on the dew which dripped from the leaves. Another remarkable fact about this infant was its ability to look at the sun without

blinking, a trait associated with the shades or ghosts of the dead. Mnesarchus adopted the child and called it Astraios (star-child) and reared it with his other three sons: Pythagoras, Eunostus and Tyrrhenus. This story of an adoption of an exposed child of miraculous powers was probably invented to account for the later occult personality of Pythagoras. The text of Porphyry is fragmentary as it is in many other places, as though it had been censored, but Astraios influenced Pythagoras in other ways, as we shall see.

According to Porphyry[9] Androcles made Pythagoras his son so that one ancient authority believed that Pythagoras' parents died whilst the boy was still a child. This is nowhere else attested, for after a brief review of Pythagoras' parentage they continue with an account of his early education. The ancient authorities stress this education for it firmly roots Pythagoras in the Hellenic tradition of philosophy. The influences of the Greek thinkers of his time such as Thales, Pherekydes and Anaximander will be discussed shortly, but for the present one must content oneself with what we know of the youth of Pythagoras. Some authorities credit him with being a champion athlete who obtained victories at the Olympic Games, but this rests upon a confusion with another later Pythagoras. Of course, Pythagoras would have been trained in gymnastics like the other Hellenic youth, but one must remember that the Ionians did not worship the body as much as the Dorian Spartans and, later, the Ionian Athenians. Somehow the Hellenic cult of the beautiful body seems foreign to Pythagoras, a fact which agrees with his foreign ancestry. If Pythagoras was not a great athlete like the philosopher Plato he must have certainly been an enthusiastic student of music. The Ionians had produced Homer and other leading Hellenic poets, and their musical modes were considered to be too soft and effeminate by the other Greeks, notably the Dorians. This was due to the influence of Asia Minor, particularly Lydia, on the culture of the Ionians. In later life Pythagoras was to turn his back on his people's music and preferred Doric music to the melodies of Ionia. Another symptom of the alienation from his home land was his contention that the dialect of the Dorians was superior to all other Hellenic languages, including his native Ionian in which the poet Homer had composed his immortal works. This

also shows that Pythagoras became assimilated to the Dorian mentality of Magna Graecia and that he rejected many of the influences of his childhood; and yet he still loved to recite the verses of Homer, especially the ones describing the death of his avatar Euphorbus. This rejection of the mother tongue is also mirrored in the fact that all his later followers wrote their works in the Doric dialect even at a time when the dialect of Athens, Attic, was fast becoming the common language of Hellas.

His musical education would have been the learning of the poets and an instruction in the playing of the lyre. Other Greek youths learned the flute, but Pythagoras is credited with a great dislike of this instrument. The reasons for this are not hard to find. The flute was largely associated with the orgies of Dionysus, and every drinking party had its flute girl to accompany the Dionysian revels. Pythagoras as a follower of the god Apollo was suspicious of the voluptuously entrancing music of the flute. Was not Pan's favourite instrument the syrinx? The flute had been invented by Athena who threw it away in disgust when she saw her reflected features in a river distorted by the incessant blowing on the wretched flute. Marsyas the satyr picked it up and became so proficient at it that he dared to challenge Apollo to a musical contest. Naturally the satyr lost and was skinned alive. There is no need to find the Nietzschean conflict of Apollo and Dionysus in this aversion to the flute on the part of Pythagoras. He sacrificed to all the gods, and his followers were not all abstainers from wine.

Naturally Pythagoras' father could afford to educate his son for there is only one malicious story from antiquity which credits Pythagoras with being a book-keeper who learnt his father's trade of the merchant. If Mnesarchus was a merchant then it would have been natural for Pythagoras to accompany him on some of his voyages, and he even may have learnt something about ledgers or their ancient equivalent, but it is wrong to suggest that Pythagoras' interest in mathematics stemmed from balancing accounts. His travels also suggest that his family was not poor and could afford to obtain the best teachers for their son. He was educated by the poet Kreophylus who wrote some poems in the epic style of Homer.[10] According to another reliable authority it was a descendant of Kreophylus, Hermodamas, who educated Pythagoras.[11] From this Hermodamas he

learnt music and poetry, which were considered by Hellenic educators as being preliminary to philosophy. One cannot be certain if this is anachronistic on the part of Pythagoras' biographers, but he must have been instructed in music and elementary writing before he ventured forth to meet the philosophers. His interest in philosophy must have been aroused by the creation myths of Hesiod and the theology of the Homeric poems. He may have even recited the poems of the legendary Linus and Orpheus who sang of the creation of the cosmic Eros with golden wings from the primal egg created in darkness. The Neoplatonic biographies, especially Iamblichus', emphasize the influence of Orphism on Pythagoras, and Herodotus links the two on at least one occasion. If the Orphic poems mentioned by such a reliable authority as Plato are indeed very ancient, then it is highly likely that Pythagoras sang them to the lyre. He must have been impressed by the wonders worked by the ancient bards like Orpheus and Linus who compelled even inanimate nature with their song. Amongst the ancients Pythagoras became the new Orpheus who cured illness and madness with his music so that he may have been inspired by the Orphic myths.

The youth of Pythagoras is not well documented and much of it is immersed in myth and fable. There is much confusion as to his parents and homeland, but one may safely conjecture that he spent his early days in Samos. His father, Mnesarchus, was in all likelihood a Phoenician from the Levantine city of Tyre, his mother an inhabitant of Samos. His philosophical education, which we must now turn to, must have been pursued in the Ionian cities close to his native island.

TWO

THE PHILOSOPHERS

All the ancient biographies agree that Pythagoras was in touch with at least three of the most important of the Ionian philosophers of the time: Pherekydes of Syros, Thales of Miletus, and Anaximander of Miletus. Pythagoras was very young when he met these philosophers and imbibed their wisdom, but only formed a lasting attachment to Pherekydes. This is not surprising since both of these men exhibited a similar outlook: they were both mystically inclined and had strong affinities with the Levant and the philosophies of the East. In explaining the influence of each of these thinkers on Pythagoras it will be necessary to expound the background to Hellenic philosophy and to adumbrate ideas of interest for the philosophical development of Pythagoras to be found in the Ionian philosophers. Since the vow of silence of the Pythagoreans forbade them to promulgate any of their master's teachings one can only surmise about them. The best reconstruction of Pythagoras' philosophical ideas is that of Porphyry[1] who suggested the following: (i) the immortality of the psyche; (ii) metensomatosis or the transmigration of souls as it is commonly called; (iii) periodic return or the idea that nothing is absolutely new; and (iv) the belief that all life is related. Both Pherekydes and Thales may have helped Pythagoras develop each of these ideas, whilst Anaximander is less important. It may seem strange that Porphyry did not mention Pythagoras' belief that everything is number or resembles it; but as will be demonstrated presently, the idea of periodic return and the other philosophical tenets above all entail a belief in the power of number.

Nobody really knows why Hellenic philosophy developed as it did or why the Greeks proved themselves such expert

philosophers. Philosophy seems to have developed amongst the Hellenic peoples from their love of discourse and their concomitant linguistic skills which only a knowledge of their ancient language can fully comprehend. This skill exhibits itself at first in the legendary poets such as Orpheus, Linus, Hesiod and Homer. The mythological and theological themes of the poets laid the foundations for the later development of Hellenic thought. In Pherekydes and Pythagoras one seems to see this mixture of myth and logic, theology and philosophy, and it is no wonder that Pythagoras, like Orpheus before him, became known as a musician of mystical renown. The beginnings of Hellenic thought as opposed to poetry are visible in the seven wise men, including Thales, the first true philosopher. These sages expressed themselves by means of moralistic sayings, but only Thales stands out as a true philosopher. The seven wise men, like Orpheus and Linus, are shrouded in myth, and Pythagoras, who was their successor, is also a hybrid being of myth and history. Again Thales is prominent for many of the unromantic, non-mystical stories told about him. Born a generation or more earlier than Pythagoras he is in many ways more real and modern.

The most important influence on Pythagoras was undoubtedly Pherekydes. Pythagoras' relationship with that sage is attested by Aristoxenus[2] in his life of Pythagoras. Diogenes Laertius[3] relates that Pythagoras was the pupil of Pherekydes, and Porphyry[4] mentions that Pythagoras nursed the dying Pherekydes on Delos, although Porphyry elsewhere[5] states that Pythagoras had not yet left Samos when Pherekydes died. This minor contradication is in conflict with the testimony of Aristoxenus, one of our most important ancient informants, and can be disregarded. The profundity of Pythagoras' devotion to Pherekydes is dramatically indicated by the dread nature of Pherekydes' disease: phthiriasis. Pherekydes was being eaten alive by lice and demonstrated his predicament to Pythagoras by poking a fleshless finger through the door. Some ancient authors confuse Pythagoras and Pherekydes by attributing similar incidents to them, such as the prophecy that a ship entering a harbour will bear a dead man. But Porphyry pointed out that these achievements belong to Pythagoras alone. Pherekydes was a contemporary of the seven wise men and was

born in the forty-fifth Olympiad (600–597 B.C.). He was rumoured to have studied the secret books of the Phoenicians and to have been the first to believe in the immortality of the psyche and introduced the idea of reincarnation. Of interest in this context is the contention of Pherekydes that Aithalides lived alternately above and below the earth: i.e. he was periodically reincarnated. Aithalides was one of Pythagoras' former lives, and it may have been Pherekydes who recognized Aithalides in his pupil Pythagoras and drew the young man's attention to the fact. Thus Pythagoras' anamnesis would have been stimulated by his teacher, and his other incarnations would then have become known to him. Pherekydes would then be the main influence of Pythagoras' later dogma on the transmigration of souls and the doctrine of anamnesis or recollection of past lives or knowledge gained in the invisible world of number. Implicit in the idea of reincarnation, although not a necessary corollary, is the belief in psychic immortality which Pherekydes was also said to have shared. Pherekydes was also a notable writer of mythological and theological works which no doubt influenced Pythagoras.

The three most important gods for Pherekydes were Zan or the ether, the upper atmosphere, Kronos or time, and Chthonie, the earth-goddess. Zan or Zeus was the creator who embroidered Chthonie with the shape and figures of the cosmos. Time was the medium in which the creation took place. Elsewhere Pherekydes stated in rather Pythagorean terms that Zan added form and proportion to the formless Chthonie, an anticipation of the later Pythagorean conception of matter (the feminine principle) being supplied with the numbers and proportions of the male creator (the One). Pherekydes was original in his conception of time as the medium for the interaction of matter and Zan. This cosmology of Pherekydes obviously fascinated Pythagoras who later borrowed many of its features for his own creation mýths. Another interesting facet of Pherekydes' philosophy was his emphasis on caves and hollows in Chthonie as receptacles of the divine hand of creation. For the later Pythagoreans and Plato the symbol of the cave became a potent mystical vehicle through which enigmatic truths could be conveyed. Apart from the three components of creation already mentioned: Zan, Kronos, and Chthonie, Pherekydes introduced

the elements of air, fire and water which acted upon the 'pentekosmos' or 'pentemychos', the five primeval caverns which completed the creation. Together with the patent number symbolism here the image of the cavern comes to the fore. For the ancient Greeks the cave was sacred to many gods, amongst which the outstanding examples are the Idaean cave of the Curetes in Crete and the grotto of Eileithyia near modern Amnissos in the same island. Mystic rites were conducted in them, and they were regarded as the focal points of cosmic energies and for the reception of metempsychosing psyches returning and leaving the earth, as Porphyry relates in the *De Antro Nympharum*. There were many famous cavernous entrances to the underworld, the most notable being on the promontory of Taenarum in southern Sparta. Other ancient authors attribute the concept of the cosmic Eros to Pherekydes, an Eros which creates the cosmos by uniting all the opposites in the primeval mass of matter and blending them into a harmonious whole (the meaning of 'cosmos'). For this purpose Zan transformed himself into the cosmic Eros. This uniting of opposites and taming of the unruly element in matter can also be seen in the Platonic 'demiourgos' or artificer of the cosmos. The myth in Plato is a later Pythagorean version of the cosmology of Pherekydes.

This cosmology of Pherekydes is in many ways akin to that of the Pythagoreans, but the most significant element in Pherekydes' influence on Pythagoras is his contention that Aithalides was in fact Pythagoras. Pherekydes must have illuminated Pythagoras and caused him to recollect his previous lives. As reincarnation is the most well documented facet of Pythagoras' teachings, this influence of Pherekydes is of great historical import. Previous surmises as to the origin of Pythagoras' belief in reincarnation have not taken Pherekydes into account. It was widely held that the idea was of Thracian or Egyptian provenance, transmitted to Pythagoras by means of the Orphics. This may well be the source of Pherekydes who awakened Pythagoras' recollections of his former existences. The most important authority for a description of Pythagoras' erstwhile avatars is Heraclides Ponticus whom Diogenes Laertius quotes as follows:

> Heraclides Ponticus says that Pythagoras had this to say about himself: he was once born as Aithalides and was considered to be the son of Hermes. Hermes told him to choose whatever he liked save immortality. So Aithalides [Pythagoras] asked that whether alive or dead he should retain a memory of the things which happened to him. When he was alive he should recollect everything, and when he died, he should retain the same memories. Later Aithalides was reincarnated as Euphorbus and was mortally wounded by Menelaus. Euphorbus stated that he had once been Aithalides and that he had received the gift [of recollection] from Hermes and described his psychic reincarnations and how he recollected the number of plants and animals he had been, and the things his psyche had suffered in Hades and what the other psyches endured. But when Euphorbus died, his psyche was reincarnated in the form of Hermotimus who also wanted to prove that he had the gift of Hermes. So he went back to Branchidae, to the temple of Apollo, and showed the shield, already in a state of decay, which Menelaus had dedicated there (Hermotimus said that Menelaus on his return from Troy had dedicated the shield to Apollo). The only thing left of the shield was the ivory boss. When Hermotimus died he became the Delian fisherman Pyrrhus. Pyrrhus remembered everything, how he had been Aithalides, then Euphorbus, then Hermotimus, then Pyrrhus.[6]

Here it is plainly stated that Pythagoras recollected that he had been Aithalides, that this same Aithalides had received the gift of recollection from Hermes, the messenger of the gods, whose son he was. From the above extract it seems that Aithalides was the first human incarnation of Pythagoras since Euphorbus only recollects plant and animal lives previous to his incarnation as Aithalides. Thus Pythagoras' previous lives demonstrate an evolution which attained its summit with the incarnation as the wise man Pythagoras. This series of incarnations proves that he did not consider himself any different from ordinary mortals, at least in respect to reincarnation; for he had been a plant and animal too. It is nowhere stated that he had been a god or

daimon, although after his death, he was considered to have attained some such divine honour.

In another interesting passage connected with Pythagoras' incarnations we are told the exact number of years which intervened between each incarnation: 216. This is a mystical number, something which the Pythagoreans considered to be associated with the cycle of birth and the revolution of change within the totality of the cosmos. The number is the product of the cube of six, six being termed a circular number because its powers always end in six. It is also a three-dimensional number symbolic of the numerical creation of solid, three-dimensional objects. Thus the foetus was considered to have been formed after 216 days. The following passage is taken from the *Theology of Arithmetic*, sometimes attributed to Iamblichus:

> Since the sum of 216 results from the cube of six, the time of a seven month birth with six days added to the seven months, in which days the sperm grows frothy and germinates, Androkydes, the Pythagorean writer of the work *On Symbols* and Euboulides the Pythagorean and Aristoxenus and Hippobotus and Neanthes stated that Pythagoras was reincarnated every 216 years. After that number of years Pythagoras entered the process of palingenesis and lived again as if according to the first recurrent cycle and return of the psychogonic cube of six. The psychogonic cube is eternally recurrent and the same because of its sphericity [all powers of six always end in six] so that because of this Pythagoras came back to life at other times. The fact that he had the psyche of Euphorbus when he did is consistent with all of the foregoing because it is nearly 514 years from the Trojan war up to the time of Xenophanes and the siege of the Ionians by the Mede Harpagus and the revolution which the Phocians fled and settled at Marseilles. Pythagoras was contemporary with all those events. Thus history informs us that Pythagoras, being at that time a student of the Egyptian priests, was carried off as a captive by Kambyses when that Persian king captured Egypt. He went to Babylon and was initiated into the religious rites of the Persians. This is true because Kambyses was a contemporary of Polycrates' tyranny in Samos, which Pythagoras fled by going to Egypt.[7]

The chronology of this passage places Pythagoras and Polycrates about 538 B.C. The Trojan war took place on this reckoning about 1052 B.C. In the words of Lévy,[8] the birth of Pythagoras must have been around the forty-second Olympiad (fifty-fourth in fact), the date of the Trojan war around 1184 B.C. and the date of birth of Euphorbus about 1220–1217 B.C. Aithalides was presumably born a generation earlier. Thus Pythagoras or at least the psyche animating all the avatars of Pythagoras was present at all the important events of Hellenic history. It is surely noteworthy that Pythagoras is always born within the sphere of Greek influence, placing him firmly in the Hellenic tradition. This, of course, may be simply an invention of later Pythagoreans, but it is interesting to notice the name of Neanthes among the authorities quoted for the psychogonic cube and the avatars of Pythagoras. Neanthes had claimed that Pythagoras' father was a Tyrian, a barbarian. There were also other stories circulating in antiquity, one saying that Pythagoras had been reincarnated as a prostitute, but this may safely be ignored. The above passage, dealing as it does with the eternal recurrence of six in the powers of six, is a precise introduction to the idea of how numbers are connected with one of Pythagoras' major teachings attributed to him by Porphyry: the idea of periodic return and that nothing is really new. Thus the eternal recurrence of six in the psychogonic cube mirrors the regular recurrence of the same events in the cosmos: time is infinite, but the matter within the cosmos is not, so that events return and repeat themselves *ad infinitum*. The Trojan war and the various avatars of Pythagoras have occurred an infinite number of times and will do so in the infinite future. The diverse ratios and numbers which create material objects and hence human beings and history are limited, thus there are such things as the regular return of the four seasons and the revolution of the sun in about 365 days. Pythagoras himself is in the midst of this numerical permanence within infinite change, but the numerical identity of Pythagoras' psyche remains constant. Even the later philosopher, Anaxagoras, who maintained that there were an infinite number of solar systems, believed that that infinite number was but a repetition of a finite amount of matter. Thus our solar system is created and destroyed an infinite number of times.

Thus this initial illumination given to Pythagoras by Pherekydes began a movement in thought which ultimately sought to give meaning to the process of change within the universe. Pythagoras' insistence on the sanctity of number is merely a quest for regularity and permanence within the cosmos; that which had neither beginning nor end, that is the divine; hence number is divine, whereas matter which is constantly changing is mortal and perishable. Thus too the idea of reincarnation and eternal recurrence prove together that the psyche is immortal; these two arguments were in fact combined by Plato to form a proof of immortality. It is an immortality which is passed alternately above and below the earth as Pherekydes had said of the psyche of Aithalides. Thus Pythagoras could never have believed in a final release from the wheel of birth. Pythagoras was only a youth when he was taught by Pherekydes and already he had a firm belief in psychic immortality and the doctrine of reincarnation. But what did the psyche of Pythagoras do in the period in which it was out of a body and unconnected with the process of birth? This cannot be answered here fully because the answer is connected with Pythagoras the musician and his doctrine of the music of the spheres. This will be considered later. One can only state that the motions and thoughts of the psyche apart from a body were akin to the movements of the stars and planets, hence the disembodied psyche was in a constant ecstasy as it revolved with the cosmic music in the ether. It contemplated the gods, the divine numbers which formed reality and saw them face to face. All these ideas are stated explicitly enough by Plato and the later Pythagoreans.

The second philosopher whom Pythagoras certainly met in these early years was Anaximander. Porphyry,[9] on the authority of Apollonius of Tyana, states that Pythagoras when a young man went to hear the lectures of Anaximander who lived in Miletus, a famous Ionian centre of culture. Anaximander was a pupil of Thales and was considerably older than Pythagoras for he died in 547–546 B.C. when Polycrates, the tyrant of Samos, was at the zenith of his power. The importance of the influence of Anaximander on the philosophy of Pythagoras has not been properly explored. The ancient biographers talk vaguely about Anaximander's conception of the 'infinite', the 'apeiron', and

how this influenced Pythagoras' own ideas of the infinite void or space which existed apart from the universe. The 'infinite' of Anaximander will be discussed presently, but he influenced Pythagoras in many other ways. He was said to be the first Greek to construct horoscopes, having learnt this art together with many other astrological doctrines from the Babylonians and the Syrians. Here one must not forget the close proximity of Ionia and even Samos, to the coast of Syria. Thus Pythagoras must have imbibed astrology from Anaximander before he ever went to Syria and Babylon. Like his master Thales he also wrote on geometry, another influence on the young Pythagoras. Like Pythagoras he believed in eternal recurrence, stating that there were an infinite number of worlds which were created and destroyed according to fixed cycles. Anaximander also developed an interesting theory of evolution whereby he believed that man had once been a fish. Pythagoras undoubtedly seized upon this idea to vindicate his own belief in reincarnation in which man goes through a series of plant and animal forms before entering the human one. Anaximander attributed divinity to the stars and to the solar systems or 'kosmoi', as the ancient Greeks termed them, a belief which is later found in Pythagoras and his followers.

For Anaximander the infinite was the universal cause, the foundation of all reality. It was the cause of creation and decay, the element from which the infinite 'kosmoi' were separated and into which they were resolved, creation being a repetitive process with no beginning or end. It is significant that there is no creator god in Anaximander for his is an essentially atheistic system of thought. We have already seen that he playfully termed the infinite 'kosmoi' gods, but even in the ancient world Cicero had ridiculed the idea of calling perishable things divine. This may be unfair of Cicero for Anaximander may have believed the stars were gods in the same way as the ancient Babylonians: they had great power and could predict the future which the astrologers interpreted. Besides, were they not immortal in the sense that, though they were periodically destroyed, yet they came back into existence? Pythagoras and the later Pythagoreans had similar notions concerning the star-gods, as shall be demonstrated presently. The infinite was the only real 'god' for Anaximander in the sense that it was

never created nor will be destroyed. The most important thing we know about Pythagoras and the Pythagoreans is that they believed in an opposition between the infinite or the unlimited and the finite or limited in the cosmos.[10] The limit was the cosmos composed of finite, material numbers, the infinite surrounded the cosmos into which it passed as if it were breath. This idea of the breathing cosmos is related to the Pythagorean conception of the universe as a living creature whose sustenance was the infinite. The infinite and the limit were the cosmic opposites for the Pythagoreans, everything in the cosmos either belonging to one or the other; hence light belonged to the limit, whilst darkness was of the infinite. In short, all bad things in the cosmos were of the infinite, all good belonging to the limit or number. This Pythagorean dualism will be examined in connection with the influence of the Magoi and Zoroaster on the philosophy of Pythagoras. It is interesting also to notice that Anaximander believed that the opposites in the cosmos were separated out by the eternal motion of the infinite. He did not stress the role of the opposites in the cosmos and hence his system is not really dualistic like that of Pythagoras. Thus Anaximander did not introduce the limit or number into the cosmic creation, the infinite and its eternal motion being sufficient to account for the origin of the infinite worlds.

The cosmology of Anaximander is very modern in many ways; the birth of the solar system being described as follows:

> Anaximander said that at the creation of this world the eternally creative power of the hot and cold [i.e. cosmic opposites] was separated out, and that from this a kind of sphere of flame congealed about the earth's atmosphere like the bark on a tree; when this sphere burst it was pent up in circles to form the sun and moon and stars.[11]

The Pythagoreans follow Anaximander in many details, but introduced into the cosmic creation the psyche or the source of motion which separated the opposites from one another. It was undoubtedly Pythagoras who assigned to the cosmic motions of the psyche a major role in the creation of the cosmos. For Pythagoras motion itself had to be explained, and the source of this motion in the cosmos was the psyche. The 'creative power' of Anaximander is an impersonal force which Pythagoras

humanized by making it a psychic phenomenon. For Pythagoras the universe was full of intelligence and life, whereas for Anaximander it was dead and blind. Pythagoras in effect mythologizes the physics and cosmology of Anaximander in a way entirely consistent with his own personal myth. Thus Anaximander's theory of evolution whereby man evolved from the lower animals because Anaximander had noted that helpless infants could never have survived in earlier times, was followed by Pythagoras in his theory of reincarnation. Man, according to Pythagoras, evolves through the forms of plants and animals by means of a psychic power, not an impersonal and blind force. Thus Anaximander is quite compatible with modern science which is satisfied with an observation of phenomena, whereas Pythagoras who claimed to see beyond external appearances, is not. Of course, the creation myth narrated by Diogenes Laertius, attributed by him to the Pythagoras of history, sounds modern with its sunlight penetrating the primeval slime of the earth to engender life. However, one must remember that the sun for Pythagoras was a god, and its light a psychic phenomenon. Thus the later Pythagoreans spoke of the psyches of men being light. Pythagoras obviously learnt all the physical explanations given by Anaximander and Thales, but in turn attributed these physical causes to supernatural ones. Therefore Pythagoras' mind was a mixture of science and metaphysics. He was also prone to superstition as is demonstrated by his explanation of the sound of a brazen gong being the voice of a demon hidden in the metal,[13] according to Aristotle.

Pythagoras must have listened to Anaximander enthusiastically when he spoke about astrology. He learnt the rudiments of the art from Anaximander which he later perfected by his studies in Babylon. Pythagoras certainly believed in the divinity of the stars,[14] but his knowledge of astrology is not stressed by his biographers. We have in fact very little astrological writing attributed to the Pythagoreans, but astrology was fundamental to the philosophy of Pythagoras as we shall see later. Anaximander, like the Babylonians, believed that the stars were circular tubes which at eclipses became temporarily blocked. Pythagoras and his followers went beyond these rather primitive speculations in his attributing a spherical shape to all the heavenly bodies. In his conception of the music of the

spheres he again mystifies the cosmos so that the idea of these star-gods and their music influencing the earth and events on it becomes at once more credible and forceful.

Again our source for Pythagoras' communication with Thales, the third Ionian philosopher who was an early influence upon him, is Iamblichus. Iamblichus[15] states that Pythagoras visited Thales in Miletus when he was only an ephebe. Thus Pythagoras would have been between eighteen and twenty when the visit took place, 'ephebe' (almost a youth) being the Greek term which designated that age group. Iamblichus (probably on the rather unreliable authority of Apollonius of Tyana) also states that Pythagoras met Bias of Priene, one of the legendary seven sages. Pythagoras must have been quite impressed by the meeting with Thales, for Porphyry[16] reports that in later life Pythagoras was apt to sit at home singing paeans of praise to Thales, long after the sage was dead. Thales was a very old man when the visit took place and Iamblichus[17] says that Thales lamented that he could not now teach Pythagoras all he knew owing to the infirmity of age. Thus he recommended that Pythagoras go to Egypt in order to learn the same secrets from the priests as he had once done when a young man. Nevertheless, Thales must have taught Pythagoras something and probably introduced him to his pupil Anaximander. Pythagoras and Thales were akin in many ways, not the least of which being their Phoenician descent. Thales, although a Hellene in culture, was a descendant of Phoenician immigrants in Greece, so that again one sees the importance of the blend of Hellenic and Phoenician civilization at this time. The most significant thing about Thales which would have appealed to Pythagoras was that sage's contention that all the universe was animate, that even stones and seemingly dead matter were full of life. Another influence may have been Thales' belief that the universe began from water, an idea he may have picked up in Egypt. Thales, like Pythagoras, had a mystical view of the cosmos, stating that everything was filled with gods.

Thales strengthened Pythagoras in his belief that the whole universe was animate, an idea Pythagoras may also have encountered in Pherekydes and the animistic religion of his contemporary countrymen. Thales was apparently a proponent

of panpsychism, the belief that everything is animated by a psyche or soul. This is, of course, not the same as pantheism whereby everything is just part of one soul. The mentality of the Hellenes was definitely pluralistic and individualistic, not monist or monotheistic. Thales had conducted experiments with the lodestone and amber, noting how they could attract other objects. He attributed this power to occult life forces inherent in the amber and lodestone. Thus even rocks and lifeless things possessed psychic existence. It is also common knowledge that the Greeks believed that precious stones and other rocks actually grew inside the earth which was an animate goddess. Mountains emerged from the earth's crust because of the growing pains of the earth, and Pythagoras said that earthquakes were caused by the shades or ghosts of the dead creating disturbances beneath the earth. The gift of Orpheus who moved things without apparent sentience like rocks and mountains rests upon the same belief in the universal animation of nature. Pythagoras, another mystical bard, also produced changes in physical objects by his playing on the kithara. Like a lodestone, Orpheus and Pythagoras by their music attracted animals and men to follow them. This panpsychism of Thales is in surprising contrast to the mechanistic mentality of his pupil Anaximander. Whereas Anaximander's eternal motion in the infinite and the cosmos was uncaused, for Thales the psyche was the primal self-mover.[18] Thales was also the first to say that the psyche was immortal, although the authority for this is not so reliable. We have already seen that Pherekydes was endowed with this honour, and some modern writers state emphatically that Pythagoras was the first Hellene to affirm belief in the immortality of the psyche. Perhaps both Thales and Pherekydes borrowed the idea simultaneously from the Egyptians or the Phoenicians. However, there remains the difficulty that neither of these peoples believed in an immortality of the reincarnation kind, although Herodotus[19] says quite definitely that the Egyptians believed in both psychic immortality and reincarnation. Thus it is likely that Thales encouraged Pythagoras in his belief in immortality which he had also heard from Pherekydes.

Immortality was not the only thing which Thales learnt from the Egyptians. He also observed the annual inundation of the Nile and saw the mud left by the flood burgeon with all sorts of

inchoate life. From this and the Egyptian hieratic myths concerning the creation of the world he learnt that the cosmos arose from the primeval water. Thus for Thales water was the creative element from which all life in the world began. The cosmogonies of the Egyptian priests also stated that the earth rose like a hill from the pristine waters, and Thales believed that the earth actually floated on the water. This cosmology of Thales was not as sophisticated as that of his pupil Anaximander who believed that the earth was shaped like a cylinder and was suspended in space (or the cosmic fire and air), remaining stationary by its equilibrium and its equal distance from all else in the cosmos. We can see that Pythagoras with his spherical earth and its equipoise in the cosmic ether owes far more to Anaximander than to Thales. Pythagoras borrowed the idea of the primeval slime and the importance of water as being necessary for the genesis of life from Thales. The sun's rays, like the Egyptian god of the sun, heated the moist earth to engender life. Within the primeval slime were all creatures which came forth as the sun heated them. This process was like the state of the Nilotic mud observed by Thales. In this context it may be worthwhile noting that within this primeval slime man and the bean for Pythagoras were intimately related: both arose from the mud at the same time, hence being related it was nefarious for men to eat beans. This prohibition against beans will be more thoroughly examined later together with his emphatic vegetarianism. This so-called affinity of man and bean was proved by an experiment conducted by Pythagoras: he placed beans in a pot and buried them in mud; after a few weeks he dug them up and discovered that they had taken the shape of human embryos.

Thales was also a famous astronomer with a strong interest in mathematics. He was said to have predicted the eclipse of the sun on at least one occasion and also calculated the sizes of the sun and moon. He measured the pyramids by an ingenious method of calculating the length of their shadows when the sun caused himself to cast a shadow equal to his own height. We have already seen that Iamblichus stated that Thales complained that he was too old to teach Pythagoras much. Thus he may not have taught Pythagoras much mathematics, but he recommended that he go to Egypt for this purpose. Thales' calculation

of the height of the pyramids has a distinctly Egyptian flavour about it, being an empirical method which the Egyptians often employed in other connections such as the calculation of the position of true north from a fixed star. Thales may therefore have borrowed the method of calculating the pyramids from the Egyptians, but won fame amongst his countrymen by telling them about it. Similarly it is quite impossible that Thales was the first man alive to predict an eclipse, for the Babylonian priests had been employing their astronomical skill for thousands of years to predict such events. Their catalogues of eclipses and other abnormal celestial phenomena stretched back a thousand years before the birth of Thales, and on their prognosticatory skill rested their political and religious influence for they could predict floods and famine to keep the masses in awe. Thus Thales made various barbarian inventions popular in Greece and won fame for himself. Pythagoras was also to do this, an example being his famous theorem concerning the right-angled triangle which was certainly known in Babylon long before his birth.

These three philosophers, therefore, had a lot of influence on Pythagoras in the critical early years when he was creating his own philosophy. His is such an important name in the history of philosophy that he actually invented the term 'philosophy' or love of wisdom. His contemporaries were known as wise men, but not philosophers. The word 'philosopher' occurs for the first time in Heraclitus, and Zeno of Elea wrote a work entitled 'Against the philosophers' which no doubt refers to the followers of Pythagoras. Whereas Thales and Anaximander and the other Ionian thinker Anaximenes were concerned with discovering a primal and monistic physical explanation of reality in terms of the elements, water, for instance, or air or the infinite, Pythagoras also sought a uniform meaning to existence and the physical world, but discovered it in an immaterial essence: number. This discovery took place long after his education at the hands of Pherekydes, Thales and Anaximander for the insight of the numerical nature of reality must have dawned on him after long experience. Porphyry's four main elements in Pythagoras' teachings, namely, reincarnation, psychic immortality, eternal recurrence and the belief that all life is related, are foreshadowed in the work of his three teachers.

From Pherekydes he learnt about reincarnation, and from either Thales or Pherekydes he could have heard about the immortality of the psyche. Even Thales had an enigmatic saying whereby the dead are the same as the living, this perhaps being a cryptic reference to reincarnation. From Thales he would have learnt about the idea that all of nature is animate, that all forms of life are related. Even Anaximander in his theory of evolution had postulated man's kinship with lower forms of life, and in Pythagoras' theory of reincarnation that kinship takes the shape of plant and animal metensomatoses. Life forces possess magnetic influences one upon the other so that the lodestone and amber became symbols of this universal relationship amongst all phenomena, an idea which the later philosophers, both Stoics and Neoplatonists, termed cosmos, sympathy. It is indubitable that Pythagoras' sympathetic magic and musical healing of disease was based on this sympathy amongst the living things within the cosmos which was itself an animate creature. From Anaximander he must have gained many insights, the most important of which being the conception of the infinite. Thus there is in the universe an element which defies logical analysis, which is opposite to number and form, which is, in short, evil and destructive. Thus Pythagoras obviously followed Anaximander's contention that there were an infinite number of worlds, that owing to eternal recurrence these worlds are but the repetition of a finite quantity of matter. The infinite is the destroyer in the cosmos, the malevolent unmaker of worlds. But Pythagoras was not as pessimistic as Anaximander for he opposed number (which he undoubtedly believed to be divine) against the evil infinite, which he actually called an evil 'daimon', imitating the dualism of the Persian Zoroastrians.

Pythagoras, according to a reliable chronology, was only twenty-two when he made the decision to go to Egypt. The reasons for this journey will be examined in the next chapter, but here we can recapitulate and speculate on the appearance and character of Pythagoras on the eve of his departure for Egypt. His mental training has been well investigated, but what of his character? This is incredibly difficult to judge owing to the controversy surrounding him even in the ancient world: sage or charlatan? He was obviously not as wonderful and beautiful as

Iamblichus' descriptions depict him. For Iamblichus he is a god incarnate and cannot help being anything but sublime to look upon. Yet there is a curious mystery surrounding even the external appearance of Pythagoras for there is no portrait bust from antiquity which can be certainly said to depict Pythagoras. We know nothing therefore about his physical appearance and neither did Iamblichus. Perhaps, like his later follower Plotinus, he refused to sit for a portrait. Some ancient busts which are presumed to depict him show a man wearing an oriental turban. This is consistent with his Phoenician background as is the ancient information that he wore trousers like Persians and was therefore labelled a barbarian by his Hellenic contemporaries. He was also said to have worn his hair long in the Dorian fashion, the Hellenic people which was closest to his heart. The Spartans, the most famous of the Dorians, never cut their hair, and neither, presumably, did Pythagoras. However, there may have been one occasion on which he did cut his hair which will be examined in the next chapter. The long hair of the Pythagoreans was proverbial in antiquity and got them into trouble with the conformist tendencies of the Romans who likewise hated the universal mark of the Hellenic philosopher: the beard. Even in the portrait busts of the later Pythagoreans of the Roman Empire one notes the long hair. Likewise, the emperor Julian, the reviver of ancient paganism in the Empire, being a follower of Iamblichus, wrote a defence of his own beard.

Pythagoras also had a physical deformity: a golden birthmark on his thigh. This may have discouraged him from accepting the Hellenic cult of the beautiful body and certainly set him apart from others. However, he even made good use of his deformity, spreading a myth that the golden thigh was a sign that he was the son of Apollo or the god himself. Abaris, the Hyperborean, when he saw the golden thigh of Pythagoras, immediately proclaimed him the Hyperborean Apollo. The golden thigh was certainly a birthmark, unless we accept the hypothesis that he had a golden plate transplanted into his flesh. His eccentric appearance and golden thigh both mark Pythagoras out as a freak who was bound to collide with the conformism of his native Samos. This is borne out by the facts. He was a perpetual wanderer and spent more time amongst the barbarians than the

Greeks, although the ancient Hellenes could hardly be termed conformists. He did not succeed in spreading his message in Greece, but had to go to the colonies in Italy in order to make himself famous. Thus his teaching became known as the Italian philosophy, and his followers belonged to the Italian school of philosophy. The ancient story told of him by Heraclides that he regarded the spectators at the Olympic Games as more important than the competitors would not have endeared him to the inhabitants of Greece or Italy for that matter.

He was also ambitious, and the story told by Isocrates about his love of fame is symptomatic of Pythagoras' desire for recognition. Isocrates also points to a cynical attitude in Pythagoras: he knew his being initiated into the cults of the gods would not benefit him spiritually, for the gods cannot be influenced or bribed, yet he would gain fame by these initiations. Thus a prime motive in his going to Egypt must have been his desire for fame. He knew enough about rational philosophy to know that religion is not what the masses supposed. The gods do not have human emotions or the human form, but are like something difficult for even the rational mind to discover: number or the infinite. Thus the Ionian philosophers had shown that there were either no gods or they were abstract cosmic forces. Pythagoras deified fire and number, but the traditional anthropomorphic gods do not appear in his philosophy. However, Pythagoras was not a materialist. He believed in the invisible and the inaudible for he alone claimed to hear the music of the spheres.

At twenty-two he must have struck his countrymen as odd: the son of a barbarian who had gained only honorary citizenship, who wore trousers to conceal his deformity, his golden thigh. He may even have got into trouble with the local authorities by stating a few of the views of Anaximander. Any sort of rational explanation of the gods would have been most unwelcome in Samos which had a mighty revenue accruing to it from the tributes deposited in its famous temple of Hera. Social class depended on a share in the priestly duties of the temple of Hera. Hence Polycrates, son of a priest, was a respectable member of the community; Pythagoras, the son of an undoubtedly wealthy barbarian, was not. The ancient authorities state that he did in fact fall out with the tyrant Polycrates,

but his crime must not have been that heinous for Polycrates gave him a letter of introduction to the king of Egypt, Amasis. Polycrates was in the habit of exiling rebellious Samians to Egypt, as Herodotus informs us, so that Pythagoras may not have been given a letter at all, just a notice to leave Samos for Egypt. Granted that the ancient authorities are correct about the letter of introduction, there still remains the possibility that Polycrates merely wanted to get rid of Pythagoras all the more quickly and the letter was an introduction to his banishment. This letter is quite plausible since we have already seen that Amasis and Polycrates corresponded with one another quite frequently. In any case, he returned to Samos only when Polycrates was dead. It is to these travels of Pythagoras we must now turn.

THREE

EGYPT AND BABYLON

Before discussing the various problems associated with Pythagoras' journey to Egypt, one must first establish whether he in fact made the trip. Next the background to the biographical material relating to his sojourn in Egypt and Babylon must be reviewed. Then a brief résumé of the state of Egypt in the second half of the sixth century B.C. must be attempted. Many critics deny that he ever made the journey, but these are inevitably the most sceptical about all biographical facts relating to Pythagoras. We have already seen that total scepticism is untenable because of the consistency of the various ancient sources. On the matter of the Egyptian visit the ancient authors are unanimous: Pythagoras certainly went there. Not only the three late biographies of Diogenes, Porphyry and Iamblichus insist on the veracity of Pythagoras' stay in Egypt, but also very early Hellenic authors concur.

Our most reliable source for Pythagoras' visit to Egypt is Isocrates who flourished in the late fifth and early fourth centuries B.C. He was born only a few generations after the death of Pythagoras so that his testimony may be based on oral tradition. Being associated with Socrates who was in turn in touch with Pythagoreans from Thebes and Italy, Isocrates may have heard of Pythagoras' trip to Egypt from the lips of Pythagoras' own disciples. In one of his speeches entitled the *Busiris,* named after the cruel Egyptian king of legend whom Hercules slew, Isocrates positively states that Pythagoras became a student of the Egyptians. His words are as follows:

> Pythagoras the Samian . . . went to Egypt and became their disciple [i.e. the Egyptian priests']. More than anyone else he attracted attention by enthusiastically pursuing the

> philosophical theories relating to sacrifice and ritual in the Egyptian temples and was the first to introduce amongst the Greeks the other branches of philosophical study. He realized that even if he would receive no extra gain from the gods for this pursuit, he would become the most famous of men. He realized this ambition. Hence he excelled other men in renown to such an extent that every young man desired to become his disciple, and fathers would rather see their sons become his followers than worrying about their own affairs. This cannot be doubted for even nowadays those who claim to be his disciples admire rather the people who are silent than those who are famous speakers.[1]

This last statement by Isocrates concerning his contemporaries who were Pythagoreans confirms what has been said previously: Isocrates was in touch with Pythagoreans and gained his knowledge about Pythagoras' trip to Egypt from them. To become a follower of Pythagoras meant to undergo an initiation which was a period of at least five years of complete silence; even after one had been accepted into the society silence concerning the teachings of the master was still obligatory. Thus anyone who became a follower of Pythagoras necessarily neglected his own affairs for he could not engage in business or, more importantly in Athens, he could not defend himself in court because he was unable to speak his defence. Those who were famous speakers in Athens at the time of Isocrates were always orators and speech-writers for those defending a case in the Athenian courts. Also Pythagoras gained his fame by silence for he would have refused to reveal his knowledge about the secret rites of the Egyptian priests except to those who had become his followers. It is also noteworthy that Isocrates claims that Pythagoras was the first to introduce 'the other branches of philosophy' or 'the other philosophy' as the Greek expresses it. We have already seen that Pythagoras was credited with having been the inventor of the terms 'philosopher' and 'philosophy'. Thus it is in this special Pythagorean sense that Isocrates is employing the word 'philosophy'. This Pythagorean philosophy includes theories relating to sacrifice and to religious rituals. What the other branches of this Pythagorean philosophy are,

Isocrates does not tell us. A famous Pythagorean theory relating to sacrifice was the prohibition against sacrificing animals; no blood sacrifice was allowed by Pythagoras. Hence some of his later followers, such as Empedokles of Akragas, constructed a cow-shaped sacrifice made of honey and barley which was offered on the altars of the gods.[2] It is doubtful whether Pythagoras learnt this idea of bloodless sacrifice from the Egyptians; however, he followed them in many other religious aspects as shall be demonstrated presently. The Pythagorean theory of sacrifice and the composition of the bloodless victims are related to the Egyptian hieratic practice later known as 'theurgy'. The later Pythagoreans such as Plotinus and Iamblichus tell us a great deal about theurgy, but Pythagoras and his early followers were bound by an oath of silence. Thus one of the components of the Pythagorean philosophy alluded to by Isocrates is certainly theurgy or the theory of sacrifice and ritual associated with the worship of the gods which is just a higher form of sympathetic magic. Intrinsic to the practice of theurgy is the belief that the gods do not themselves answer prayer and sacrifice, nor do they confer benefits merely for the good intentions of the worshippers. The theurgist literally forces the gods by magic to grant him favours. Thus Isocrates states that Pythagoras did not expect to gain much from the gods by his studies in Egypt, instead he wished for eternal fame amongst men. Theurgy is cosmic magic which prepares the initiate for contact with the gods and is in no way a primitive system of reward for sacrifice and prayer which one perceives as essential to all revealed religions.

Even older than that of Isocrates is the testimony of Herodotus of Halicarnassus who wrote his *Histories* in about 450 B.C. Herodotus does not explicitly state that Pythagoras visited Egypt, yet he hints that Pythagoras and his followers borrowed many of their ideas from the Egyptians. With regard to psychic immortality and reincarnation Herodotus suppresses the names of those Greeks who had made these doctrines their own. We do not know the reason for this silence, but Herodotus demonstrates a truly Pythagorean reticence:

> The Egyptians were the first to state the doctrine that the psyche of man is immortal, and that when a man's body

perished he was always reincarnated into another animal. When he had passed through all the forms of terrestrial, marine and bird life, he again assumed a human body; this cycle of psychic incarnations took three thousand years. There are some Greeks who embraced this doctrine, some earlier, some later, as though it were their own. I know their names, but refuse to divulge them. No woollen apparel is allowed into Egyptian temples; nor are Egyptians buried in woollen shrouds for it is an insult to the gods. In this they agree with the so-called Orphics and Bacchics, since these cults are Egyptian, and the Pythagoreans. Hence it is forbidden for anyone who had been initiated into any of these Greco-Egyptian religious rituals to be buried in woollen garments. There is extant a so-called *Sacred Doctrine* concerned with them [i.e the rituals].[3]

The Greeks to whom Herodotus is referring when he mentions psychic immortality and reincarnation are undoubtedly Orpheus, Pherekydes and Pythagoras. He also says that the Orphics and Pythagoreans borrowed many of their religious ideas from the Egyptians. Herodotus even goes so far as to suggest that the cults of the Orphics, Bacchics and Pythagoreans are Egyptian. Herodotus, then, believes that Pythagoras and his followers were really Egyptians in disguise, having borrowed all their religious doctrines from the Egyptians. Obviously to gain this knowledge of Egypt Pythagoras must have been in the land of the Nile and undergone initiation into the various Egyptian cults. However, Herodotus cleverly avoids avowing this openly, but his hints and allusions are not exactly delicate. Herodotus, of course, wanted to show that the gods of different peoples were essentially the same, and that polytheistic worship formed an essential unity of dogma and belief. He was impressed by what he saw in Egypt and wanted to demonstrate that the rites and religious practices of his own people were connected with the wonderful religion which he had discovered in Egypt. Because of this admiration for the barbarian religion of Egypt, Herodotus was termed a 'lover of barbarians' by the later writer Plutarch. Perhaps Herodotus wished to avoid the wrath of the followers of Pherekydes and Pythagoras when he refused to

state the names of the Greeks who had plagiarized the ideas of psychic immortality and reincarnation from the Egyptians.

Apart from the testimony of Herodotus and Isocrates there are many Greek authors of the Roman period (first century A.D. onwards) who maintain that Pythagoras visited Egypt; among them being Strabo,[4] Plutarch,[5] and Philostratus.[6] With Philostratus and his biography of Apollonius of Tyana we are entering the Neopythagorean stage of the Pythagorus legend. Apollonius of Tyana modelled his own life on Pythagoras and visited not only Egypt and Babylon, but also India. The evidence of these late authors is not as reliable as that of Isocrates; nevertheless there is a consistency about their insistence on Pythagoras having gone to Egypt. Likewise our three ancient biographies all agree that Pythagoras was there. In connection with these biographies written by Diogenes Laertius, Porphyry and Iamblichus one has the peculiar difficulty of their having been composed at a time when Hellenic culture was very interested in the East. One has only to recall the eastern journeys of Apollonius, of Plotinus and the numerous reports of oriental philosophy which infiltrated the commercial centre of Alexandria during the second and third centuries A.D. At this time particular interest was taken in the Magoi of Persia and the Gymnosophistae or naked philosophers (Saddhus) of India. Apollonius may have visited Persia and India, but it is extremely doubtful whether one can believe the account of India given by Philostratus in his biography of Apollonius. Plotinus got as far as Mesopotamia, then had to turn back owing to the death of the Roman emperor Gordian under whose protection Plotinus was making the trip east as a volunteer in the emperor's service. Some critics argue from this state of affairs that Pythagoras' late biographers have merely inserted a fictional account of his journey to Egypt in order to satisfy the contemporary taste for oriental mysticism; Pythagoras studied in the East, therefore he is of current interest. The biographers, however, never claim that Pythagoras went to India, and journeys to Egypt and Persia were commonplace amongst the classical Greeks. Plato studied in Egypt, and the Hellenic authors knew a lot about Persia and its religion. One has only to recall the works of Xenophon; and Herodotus travelled extensively in both Egypt and Persia. Thus it would be surprising if Pythagoras had not visited Egypt and

Persia. If Pythagoras did visit Egypt, as now seems certain, how reliable are the biographers' accounts of that journey? There are minor discrepancies in the three narratives, which can be accounted for by confusions in chronology. It could hardly be otherwise owing to these authors having written centuries after the death of Pythagoras. But before examining the biographical material one must first turn to the state of Egypt at the time when Pythagoras visited that country.

In the sixth century B.C. Egypt was well past the zenith of its power. It no longer had an extensive empire, but had managed to retain its autonomy with the aid of Greek mercenaries. It had escaped from the tyranny of the Assyrians, and with the accession to power of Psammetichus I it was in touch with the Greeks. These relations with the Hellenic world were mainly commercial and military, and the Egyptians, being notoriously xenophobic, did not allow the Greeks to penetrate very deeply into the economic and cultural life of their country. During the long reign of Amasis II (570–526 B.C.), probably the most important king of the twenty-sixth dynasty, the Hellenic influence in Egypt spread. Amasis encouraged them, for he wished to remain autonomous in the face of the rising power of Persia under Cyrus the Great. For the Hellenic merchants Amasis founded a city on the western branch of the Nile, Naucratis, which was to remain an outpost of Hellenism until the total absorption of Egypt into the Hellenistic kingdom of Alexander and, later, of Ptolemy I. It was during the reign of Amasis that Pythagoras came to Egypt. The tyrant of Samos, Polycrates, was also in touch with the Egyptian king, as we have shown. However, the Greeks in Egypt were not popular owing to their success in business and their military power. The Egyptians obviously feared them for there were Hellenic colonies in Cyrene (modern Libya) and an increasing number of Hellenic soldiers and merchants in Egypt itself. But the Egyptians feared the Persians more and tolerated the Greeks in their midst. With the death of Amasis Psammetichus III ascended the throne, and scarcely had he done so when Kambyses, the Persian king, invaded and conquered Egypt. Thus the New Kingdom of Egypt came to an abrupt end. So did the studies of Pythagoras in Egypt for he was enslaved and transported to Babylon, having been in Egypt for about

twenty-five years (*circa* 550–525 B.C.) according to one chronology.

A chronological problem is immediately encountered as soon as one attempts to fix the date of Pythagoras' departure for Egypt. Adding to the confusion is the question of his age at the time of that departure. All three biographies agree that it took place during the reign of Polycrates (538–522 B.C.). Iamblichus[7] maintains that Polycrates saw him as a threat to his position as tyrant of Samos, that Pythagoras was an ephebe at the time of his departure, and that before Pythagoras even went to Egypt he visited the Levant. Thus it would be safe to say that according to Iamblichus Pythagoras left Samos in 538 B.C., or soon after, for he could not tolerate Polycrates' despotic rule. If he were an ephebe at the time (eighteen to twenty years of age), then on Iamblichus' information he would have been born in about 558 B.C. This date for his birth conflicts with that of Aristoxenus who placed it in 570 B.C. If Iamblichus is right, Pythagoras could not have stayed more than twenty years in Egypt, for other sources, as we have seen, state that he left for Babylon with Kambyses in about 525–521 B.C. Having departed in 538 B.C. for Egypt, he certainly went to Babylon thirteen or so years later. This chronology agrees with the facts more because it seems incredible that Pythagoras could have stayed in Egypt for so long as twenty or more years. The later date for his birth (558 B.C.) is also more probable because it makes him a man in his forties when he headed for Italy to start a new life (around 510 B.C.). If we accept Aristoxenus' chronology he would have been about sixty when he made that arduous trip to a strange land. Of course, he may have been sixty, but it is less likely.

An interesting precis of the chronology of Aristoxenus is given by Rathgeber[8] which runs as follows: Pythagoras was born in 569 B.C., he left Samos in 551 (to go to the Levant and also to see Thales and the other philosophers) when he was eighteen (Iamblichus' testimony is here taken into account); he arrived in Egypt in 547 B.C. and stayed there until 525 when Kambyses invaded the country; from 525 until 513 he was in Babylon; on his return to Samos in 513 B.C. he learnt that Pherekydes was dying (he died the same year in 513); in 510 he arrived in Italy and stayed there for thirty-nine years until his death in 470 B.C. What Rathgeber has neglected to take into

account is the unanimous testimony of the three biographies that Pythagoras left Samos during the reign of Polycrates around 538 B.C. Now this evidence of the three biographies is important because it gives us many insights into the historical and political conditions of the time. Both Diogenes Laertius[9] and Porphyry[10] mention a letter of recommendation which Pythagorus received from Polycrates, the letter being addressed to Amasis. Diogenes merely states that Pythagoras received a letter from Polycrates, addressed to Amasis. He does not expatiate on what the letter was specifically for, but Porphyry is a little more explicit. According to Porphyry Pythagoras actually asked Polycrates for a letter of recommendation; this implying that relations between the two were not all that bad. Porphyry also informs us that the letter was a means of getting in touch with the priests in the Egyptian temples, for Pythagoras had obviously heard of their secrecy and unwillingness to communicate very freely with strangers. Almost a century later Herodotus may have had difficulty in obtaining information from the Egyptian priests so that much of the detail in his second book of the *Histories* has a distinctly tourist-guide flavour about it. Herodotus does not mention any Egyptian priests by name and did not attend any esoteric religious ceremonies, for he only describes public festivals. He reports what the priests have to say about king Sesostris,[11] but does not quote them on religious matters. This is totally unlike the story which Plato tells about Solon, one of the legendary seven sages, in his famous dialogue, the *Timaeus*. There Plato introduces Solon obtaining unique historical information about pre-historic Greece from an Egyptian priest. This, of course, may be fictional, but it does reveal that the Greeks regarded the Egyptian priests as valuable sources of information.

Thus according to Porphyry Polycrates wrote a letter for Pythagoras which introduced him to the Egyptian priests with Amasis, a critical admirer of Polycrates, as the intermediary. Only Iamblichus is silent about the letter. The reason for this is fairly obvious: Iamblichus wished to emphasize the friction between Pythagoras and Polycrates so that it would be implausible for Polycrates to recommend an enemy to Amasis and the Egyptian priests. Also Iamblichus wants to have Thales as the main influence on Pythagoras' decision to go to Egypt.

Iamblichus takes Pythagoras on a journey through Ionia and the Levant before he ever arrived in Egypt. This journey in itself is not improbable: Pythagoras must have made it. However, Thales may not have been the primary stimulus for Pythagoras' wish to visit Egypt. It is a dramatic fiction of Iamblichus as is the romantic and fantastic description of Pythagoras' actual voyage to Egypt which Iamblichus foists on the reader, a story to be examined presently. Pythagoras did travel to Egypt with a letter written by Polycrates, and he would almost certainly have gone via the Levant, for as Iamblichus[12] states, it was an easy voyage from there to Egypt. According to Diogenes[13] Pythagoras took three silver cups with him to Egypt, possibly as a gift for Amasis or as a means of survival whilst in Egypt. Again this travelling wealth of Pythagoras points to the fact that he must have come from a fairly rich merchant family. The incident of the cups also underlines the belief of Diogenes that Pythagoras left Samos with the express intention of seeing the priests in Egypt (the cups were a present for the priests according to Diogenes, but would not have lasted very long if, as Iamblichus insists, he visited all the temples in Egypt). Therefore both Diogenes and Porphyry believed that Pythagoras went directly to Egypt from Samos. In any case neither of them mentioned any trip to Ionia and the Levant before Pythagoras finally landed in Egypt. Porphyry and Diogenes omit any details of the journey to Egypt because their biographies are not narratives, but merely factual accounts of Pythagoras' life. On the other hand, Iamblichus' biography is a curious mixture of fact and dramatic invention: he narrates Pythagoras' voyage to Egypt as though it were part of a novel. Thus his account is not very trustworthy, even though it has substantial merits.

Iamblichus' narrative is fairly smooth and externally convincing in its forging of credible connections between the triple influence on Pythagoras' early career of the Hellenic philosophers, the Phoenicians, and the Egyptians. Pythagoras first visits Pherekydes, Thales and Anaximander, and after Thales has urged him to seek knowledge in Egypt, Pythagoras decides to visit that land also after he has absorbed all the divine vibrations emanating from the temples of the Phoenician towns such as Tyre or Byblos. After Thales has prompted him to examine the Egyptian mysteries, Iamblichus[14] tells us that

Pythagoras suddenly felt an atavistic urge to visit Sidon, the Phoenician city, for he knew that it was his natural birthplace (he had been born there of Hellenic parents according to Iamblichus). But we have already seen that Pythagoras' father was a native of Tyre, another Phoenician city, so that the historical Pythagoras obviously would have visited his father's native country. His father being a Tyrian, Pythagoras spoke the language of the Phoenicians and must have been more acceptable in the eyes of the priests to be initiated into the mysteries of the Phoenician gods. Iamblichus says that he was initiated into all the divine rites in Byblos and Tyre,[15] and that this was not done out of superstition or fear of the gods, but because he did not wish to allow any divine emanation to escape him. This explanation of Iamblichus is somewhat kinder than that of Isocrates who imputed a burning ambition to Pythagoras, stating that his motives for initiation were based on a desire to be famous. Iamblichus' reason is in accord with the religious quest of the third and fourth centuries A.D. for then the worshippers of the pagan gods went to any lengths to discover truth in the ancient mysteries. They sought out all the oracles and temples where initiations were performed in order to draw inspiration from them all. Even pagans who later became Christians, like Synesius of Cyrene (fourth century A.D.), having given up the search in order to rest in the dogmas of Christianity, devoted most of their lives to visiting the temples of the ancient gods. Synesius described his restless quest as follows:

> Indeed, O king, I approached all the temples built to serve your sacred rites on my knees as a suppliant, moistening the region of my eyes with tears, lest my journey prove in vain. I supplicated the gods and their ministers who dwell in the fertile plains of Thrace, and who range the fields on the opposite coast of Chalcedon. These gods you crowned, O prince, with angelic aureoles to be your servants.[16]

These temples were, of course, the prime target of Christian vandalism. Thus the first Christian emperor Constantine sacked and pillaged the pagan temples for their gold and precious objects which had been deposited there over the centuries,

especially at Delphi. It must not be forgotten that the ancient temple was not primarily a place of worship, but a house of the gods to whom sacrifice was performed outside the temple. The temples also served as banks in antiquity so that Constantine must have made quite a haul to pay off his armies when he ransacked them. Yet many temples survived even to the time of Synesius and after, and the sacred rites continued in the face of Christian bans such as that of Theodosius (*circa* A.D. 390) who outlawed pagan worship in the Empire. From then on the temples which were not converted into Christian churches were destroyed. For centuries Coptic monks in Egypt hacked the temples and statues to pieces until one ambitious Moslem decided he could rip down the pyramid of Khephren. However, in Egypt the ancient religion was tenacious, and Egyptian pagans like Heraiskos were still being persecuted by the Byzantine emperor Zeno in the fifth century A.D.

It is understandable that Iamblichus has Pythagoras visit all the pagan temples in the Levant and Egypt for here was a model for every pagan to imitate and prevent the temples from being destroyed. Likewise, Iamblichus, being a Syrian, would have had a special interest in preserving the temples in his native land. It was physically impossible for Pythagoras to visit all these temples, but he must have been initiated into many rites for all our ancient information stresses his love of initiation and the ancient gods. In sixth-century-B.C. Ionia belief in the gods was still strong and had not been shaken by the rationalism that was to develop in the fifth century, yet Pythagoras, having come into contact with atheistic philosophies such as that of Anaximander, must have decided that the traditional gods were not good enough. Hence his search among the temples of the barbarians. Indeed, all the philosophers who still believed in the divine, invented strange gods; one of the strangest being the spherically-shaped god Sphairos of Empedokles, the follower of Pythagoras. Of course, for Pythagoras the gods were numbers and stars that created the music of the spheres. Before turning to these new gods of Pythagoras, one must first examine his relations with the old.

Let us then follow Iamblichus as he leads Pythagoras through the temples of the Levant to disembark ultimately in the sacred land of Egypt. Iamblichus is not without clever details in his

description of Pythagoras' sojourn in the Levant. Hence he has Pythagoras associate with the descendants of the mysterious Syrian student of nature (physiologus, some sort of occult philosopher) named Mochus who was rumoured to have invented an atomic theory which later the Greek atomist Democritus borrowed, and other hierophants of the Levantine cities. Iamblichus may have known a lot about the occult tradition in Syria, but he does not tell us all that much. Iamblichus must have been aware that the Phoenicians had some rather grisly religious rites including child sacrifice, but he does not mention them. The Tyrian god Melcart, the so-called Hercules of Tyre, was a dubious character, but the fish goddess Atargatis who was related to Mesopotamian fish divinities born from a cosmic egg may have aroused Pythagoras' enthusiasm. In all fairness to the Phoenician gods there must have been some edifying mysteries for Pythagoras. In any case he would have learned from his experiences there to avoid blood sacrifice, an idea which later became central to his teaching. Today it is hard to understand a fascination with the multiplicity of the divine which would have greeted Pythagoras on his journey, but in the temples of India one can see the advantages of a polytheistic heritage: the searcher's mind is awed by the possibilities and not constrained by abstract dogma. Pythagoras certainly saw the unity behind the plurality of gods, but by that very token he did not lose sight of the beautiful vista of possibility. He came to the startling conclusion that the unity was not a god in the anthropomorphic sense. The gods exist in a numerical plurality, but beyond them lies an ineffable unity. Unlike monotheistic religions the Greeks and their foremost religious thinkers did not abandon the gods in favour of this unity. Instead of narrowing their conception of the divine, they expanded their awareness of it. Instead of binding the gods to social and political expediency, they created a neutral symbolism for the divine, sometimes termed numbers (Pythagoras), sometimes ideas in a transcendental sense which were in any case number (Plato) or the stars. Pythagoras would have encountered the more objective astral religion of the Syrians and the Babylonians in his stay in the Levant, a religion whose gods were not tribal or anthropomorphic, but certainly had political overtones: the astrologer-priest wielded great power in Babylon, a phenome-

non which did not escape the totalitarian nature of Plato. Moreover, the astral deities were universal and transcendent: the heavens ruled mankind and were beyond the influence of men. We shall return to the astral religion of Pythagoras later.

After he had undergone all these initiations in the Phoenician coastal cities Pythagoras led the life of a hermit in a temple near Mount Carmel. Lévy compares this interlude with Christ's solitudinous vigil on a mountain (p. 302). The temple was later described by Suetonius as being dedicated to Baal. After spending some time in solitude on the sacred mountain Pythagoras saw a ship enter a cove below. He decided to sail to Egypt. The description of the young Pythagoras about to sail to Egypt given by Iamblichus is very typical of his narrative method so that it deserves to be quoted in full:

> Pythagoras delightedly followed the instructions of his teacher Thales without delay and obtained passage with certain Egyptian boatmen who opportunely happened to anchor near the beach beneath the Phoenician Mount Carmel where he led the life of an anchorite, mostly around the temple. The Egyptians were glad to see him, foreseeing that they could ravish his youthful beauty and obtain a high ransom for his release. Afterwards, however, they became better disposed towards him because he kept his head and acted quite normally. They also saw something superhuman in the elegance of the youth, and they remembered how he had appeared to them as soon as they had dropped anchor, descending from the summit of Mt. Carmel (they knew that it was the most sacred of mountains and few could climb it). He had walked leisurely and without turning back, no precipitous or impassable rock having barred his way; and approaching the boat had said 'I'm going to Egypt'. They had agreed, and he came aboard and sat silently where he was least likely to disturb their nautical labours. For the whole of the voyage, two days and three nights, he remained seated in one and the same attitude, neither eating nor drinking nor sleeping, unless he snatched a little slumber whilst they were not looking in his secure and stable corner. Moreover, they had an unexpectedly swift and direct voyage as though some god were on board.[17]

This passage is fairly typical of Iamblichus' attitude towards Pythagoras: he is as beautiful as a young god who charms even pirates with his charisma. There are many models in antiquity from which Iamblichus could have borrowed to adorn his idealized portrait of Pythagoras. One immediatedly recalls the myth of the young Dionysus and the Tyrrhenian pirates whom the god transformed into dolphins after they had tried to attack him. There is also the story of the semi-mythical poet Arion who managed to escape from a similar situation. Pythagoras' hypnotic powers were even greater than Dionysus' for he did not have to employ violence against the sailors. They did not dare to lay hands on him because they thought he was an incarnate deity from Mt Carmel, the holy mountain. It is also interesting to notice the role of the young Pythagoras as a hermit seeking enlightenment on a sacred mountain, something he was later to do in a cave in Samos. Iamblichus did not invent this incident, but probably borrowed it from a much older biography, possibly that of Aristoxenus or even the writings of Heraclides Ponticus. As to the story of the Egyptian boatmen, it is very doubtful whether the historical Pythagoras was ever like this. The more mundane tale of the letter of introduction and the silver cups as a gift for the Egyptian priests is more likely to be true. However, the passage from Iamblichus does illustrate the aura surrounding the figure of Pythagoras in late antiquity.

It can be inferred from the more plausible accounts of Pythagoras' voyage to Egypt that he landed at Naucratis, the port allocated to the Hellenic merchants by Amasis. From here Pythagoras could get his bearings and decide what to see first. After leaving this narrow enclave of Hellenic civilization complete with a temple where all the Greeks could worship, Pythagoras headed for the obvious place: Heliopolis and Memphis in the district around the sphinx and the pyramids. Porphyry[18] tells us that he went to Heliopolis first to see the priests. Heliopolis, or Anu in the Egyptian tongue, was a famous centre of solar worship which had a very influential priesthood. On his way to Heliopolis ('the city of the sun') he must have stopped at Sais which was the Egyptian capital at this time to see the king, Amasis, and present his letter of introduction from Polycrates. Amasis would then have directed him to go to Heliopolis to consult the priests. Obviously Amasis

must have known about the exclusiveness of the ancient priesthood at Heliopolis and even he was powerless to obtain an admission to the temples for Pythagoras. The priests refused to admit the barbarian, and, according to Porphyry,[19] sent him to the priests of Memphis which lay not far to the south. Here, too, Pythagoras found that the priests refused to accept him as a student and neophyte in the Egyptian mysteries. They advised him to go north to Diospolis and see if the priests there would receive him. The Egyptians in antiquity were notoriously xenophobic (a trait they still retain), and Plato cursed them as 'miscreants from the Nile' because he too had suffered their intolerable (for a Greek, the most hospitable of the ancient peoples) attitude to helpless strangers. The Egyptians were monsters of intolerance towards any strangers who broke any of their taboos (whether inadvertently or not), a fact which contrasts sharply with the special leniency Plato introduced in his work *The Laws* to be exhibited towards any foreigner who happened to transgress a law or custom unwittingly. Thus Pythagoras had to be on his guard and needed all the charisma Iamblichus could give him. He may have even travelled alone, for in the *Histories* of Herodotus a solitary Greek in the market place at Memphis, the brother of Polycrates himself, is said to have given his cloak to the future king of Persia, Darius.[20] Thus it must have been fairly common for travellers and exiles to go it alone in Egypt.

Here then was Pythagoras in the middle of Egypt in the year 535 B.C. or thereabouts, having been rejected by the two most influential priesthoods in Egypt and uncertain of his future. He decided to persevere and went to Diospolis in accordance with the advice of the priests of Memphis. Here at last he was accepted, but the priests of Diospolis imposed harsh tests on him, according to Porphyry.[21] Porphyry is not very explicit about the nature of these tests, but does mention that they were foreign to Hellenic ways. Pythagoras would have had to have his hair shaved in order to be admitted to the Egyptian temples and to have observed all the Egyptian taboos. The Egyptians had many of these: many birds and animals were sacred so that their flesh could never be eaten. One interesting taboo which the priests observed was the abstention from beans. Herodotus describes this as follows:

> Fish they may not eat. Beans are never sown in Egypt, and if any chance to grow, the Egyptians will not eat them raw or cooked; the priests even abhor the sight of them, accounting them unclean.[22]

This is the origin of the famous taboo of Pythagoras against the eating of beans. Plutarch (*Quaest. Conviv.* 729a) also knew about this origin of the Pythagorean abstention from beans. We have already seen how this is connected with Pythagoras' cosmology and theory of the creation of life; moreover, the primeval slime in which man and bean are related was an Egyptian theory or, at least, inspired by the annual inundation of the Nile. The Egyptian priests may have taught Pythagoras about the foetal nature of the bean and instilled a similar attitude in him towards beans. Pythagoras' followers retained his aversion to the eating of beans; Empedokles, for example, advised people against it: 'Wretches, you poor wretches, keep your hands off beans.[23] The abstention from beans in the teachings of Pythagoras is also connected with the taboo against the eating of animal flesh: everything endowed with a psyche or life was not eaten. Both of these taboos Pythagoras learnt in Egypt.

Thus having been admitted to the temples in Diospolis, Pythagoras must first have learnt the Egyptian language in order to enable himself to read the sacred writings of the Egyptians. Porphyry[24] tells us that he indeed learnt the Egyptian language. Porphyry[25] goes on to tell us that there were three types of Egyptian writing: epistolographic, hieroglyphic and symbolic. This is not strictly true as other ancient informants tell us a little more about the nature of Egyptian writing, information which greatly assisted in the final decipherment of the hieroglyphic and cursive scripts of the Egyptians. What is interesting in Porphyry's account of Egyptian writing is his mention of the symbolic script: this became the basis of Pythagoras' symbolic method, his teaching by means of symbols and parables, a method which will be fully described in the next chapter. Pythagoras appears to have been the first Greek to learn the Egyptian language, a feat which was not equalled by any subsequent native Greek. Of course, later when the Hellenes conquered Egypt at the time of Alexander many Egyptians who could also speak Greek imparted to the

Hellenic world much information about the Egyptian tongue and the mysteries of the priests which were enshrined in the hieroglyphs. In this knowledge of the Egyptian hieroglyphs Pythagoras towered above his Greek contemporaries and fulfilled the dream of Thales who, according to Iamblichus[26] predicted that Pythagoras would be the wisest man alive if he went to Egypt. Egyptian hieroglyphics for the later Greeks were an object of awe and wonder; they became endowed with a magical aura so that he who could decipher them became almost equal to the gods. The later Pythagoreans such as Porphyry, Plotinus and Iamblichus identified the hieroglyphs as material and visible symbols of the world of number and the gods. Thus whoever could read and understand them was in command of an entry into the invisible heaven of number. It is no wonder then that Porphyry says that Pythagoras learnt to read hieroglyphics, for was he not the first to state that all reality was number? He learnt this by reading hieroglyphic symbols of the invisible world of number. Could this attributing a knowledge of Egyptian hieroglyphics to Pythagoras on the part of Porphyry be another Neoplatonic aberration? Evidently not, for Diogenes Laertius, himself no Neoplatonist, affirms that Pythagoras did in fact learn the Egyptian language.[27] This, however, does not mean that Pythagoras believed that the hieroglyphs were symbolic of a transcendental world: or does it? In any case, he must have considered them to be the key to an understanding of Egyptian religion and philosophy.

All the biographers and also Isocrates agree that Pythagoras was initiated into the rites and mysteries of the Egyptian temples. What these mysteries were they do not tell us. All the Egyptian temples had secret rooms where the rites of the gods were celebrated. No outsiders were allowed to be present; this means that Pythagoras must have become an Egyptian priest or its equivalent. The central mystery of the Egyptian religion externalized in festivals was the death and transfiguration of Osiris. Osiris, a legendary king of Egypt, was killed and his body dismembered by the incarnation of evil, Seth. His wife, Isis, gathered the fragments of his body, all except his phallus, and miraculously restored his mummy to life. Osiris then became the king of the underworld. Osiris promised eternal life to his followers, a promise which the Orphics in Greece likewise

made. In other respects the myths of the Orphics resemble the Osirian legends: Zagreus, an Orphic god, was torn apart by the Titans and later restored to life by Zeus. Plotinus amongst others alludes to this myth in his *Enneads* (IV 3, 12, 1–2). Herodotus, too, noted the similarities between the religion of the Hellenes and that of the Egyptians. The Orphics, of course, were a cult very similar to the Pythagoreans. Thus the legend of Osiris must have impressed Pythagoras. Another aspect of Pythagoras' teachings which was inspired by the Egyptians is the central role of the sun-god, Apollo, in the Pythagorean philosophy. Apollo was the secret name of the One, the source of all number. Pythagoras too, as we have already seen, associated himself closely with the sacred island of Delos, the legendary birthplace of Apollo. It was on Delos that the priestesses of the Hyperborean Apollo celebrated their rites, and Pythagoras later became known as the Hyperborean Apollo. Sun-worship was very prominent in the religion of the Egyptians. About seven centuries before the arrival of Pythagoras in Egypt the pharaoh Akhenaten had made the worship of the sun's disk, Atum, replace that of the other gods. Although the sun never again in Egyptian history attained this pre-eminence, traces of the worship may have lingered on in Egypt. Pythagoras may have been inspired by this sun-worship to elevate Apollo to the central symbol of his philosophy. Akhenaten and Pythagoras also influenced Plotinus' conception of the One, which that so-called Neoplatonist calls Apollo and Hyperion, both Pythagorean names for the One and the sun.

The secrecy and silence of the Egyptian priests would have strengthened these tendencies in Pythagoras. Likewise their exclusiveness became a model for his own secret society which he later founded in Italy. Later Pythagoreans like Apollonius of Tyana were such strict vegetarians that they would not even wear clothing or shoes made from animal skins. The Egyptian priests wore only linen clothes and sandals made of papyrus. Apollonius of Tyana, too, wore on his feet only papyrus sandals. Presumably Pythagoras followed the mode of dress of the Egyptian priests; and we have already seen that Herodotus said the Pythagoreans refused to be buried in woollen shrouds, the Egyptian priests having placed a ban on the wearing of wool inside the temples. (Even today no leather article of clothing

may be worn inside a Hindu temple.) These Egyptian customs were connected with the obsession with ritual purity, and in Pythagorean literature the rite of purification is omnipresent. Empedokles even entitled one of his famous poems the *Purifications*. In fact, the whole philosophy of Pythagoras became a purification: music and mathematics being means to attaining purification.

Porphyry[28] states that Pythagoras also learnt geometry from the Egyptians. Egyptian geometry was mainly empirical and practical and arose from the need of an accurate mensuration of fields after the annual inundations of the Nile. The Egyptian priests kept even these simple geometrical calculations secret, but Pythagoras would have learnt much Egyptian geometry beforehand from Thales. Egyptian mathematics, to judge from the surviving mathematical papyri, was not nearly as advanced as that of Babylon. It was mainly concerned with practical problems and would not have held much interest for the more theoretically minded Pythagoras. Even if there are mysterious mathematical formulae embodied in the pyramid of Cheops, one does not encounter in Egyptian religion any mathematical symbolism, as one does, for instance, at Babylon. Thus all Pythagoras could have learnt from the Egyptians would have been elementary geometry. The Egyptians were not concerned with any theories of arithmetic and geometry so that Pythagoras' contributions in the theoretical field owed little or nothing to the Egyptians. Likewise Egyptian astronomy was not very advanced, but the Egyptians did worship the stars, the hieroglyphic determinant for a god often being in the shape of a star. The two central heavenly bodies worshipped by the Egyptians were the sun and the Dog-star Sirius, called 'Isis' by the Egyptians, this star being important because its annual rising heralded the beginning of the floods of the Nile. The sun and moon were also associated with Osiris and Isis respectively so that Pythagoras must have learnt something about astral worship whilst in Egypt.

It is my view that Pythagoras remained in Egypt for about ten years only, not twenty as Iamblichus would have us believe. He arrived about 535 B.C. when he was in his thirties, remaining until 525 B.C. when Kambyses, the Persian king, invaded Egypt. The latter date is quite certain for Pythagoras left Egypt as a

prisoner of the Persians. He must have arrived in Babylon about the same year. During that ten years he apparently remained in the Egyptian temples being instructed by the priests in the religion and learning of Egypt. We do not know how many temples he visited, but Porphyry tells us that he was admitted only to the temples at Diospolis. Whether he managed to gain admission to any other temples we shall never know for certain. The sojourn in Egypt is symptomatic of Pythagoras' incessant quest for knowledge. Heraclitus criticized this astounding array of knowledge at Pythagoras' disposal by saying that polymathy could never produce wisdom; the words of Heraclitus being as follows: 'Pythagoras, the son of Mnesarchus, above all men practised the pursuit of knowledge. He collected these writings and forged for himself a wisdom, a polymathy, a quackery.'[29] Empedokles concurred in this judgment concerning Pythagoras' immense learning, but, of course, disagreed with the envious carping of Heraclitus. Thus it is no wonder that Pythagoras' early life is mostly an account of what he learned from various sources. Knowledge was in itself mystical for Pythagoras because it is gained by the psyche's recollecting its previous existences and its encounters with the world of the gods and the cosmic music. Pythagoras loved all the rites of initiation because each of them caused the psyche to remember just a little more of the invisible world.

When Kambyses invaded Egypt in 525 B.C. he found an Egypt in its decadence. He easily disposed of Psammetichus, the last Egyptian ruler of the twenty-sixth dynasty and proclaimed himself king of Egypt. Kambyses was a particularly odious character and did nothing to endear himself to his new Egyptian subjects. Instead he insulted their gods, killed the Apis bull, the incarnation of Osiris on earth, and persecuted the priests. One of his policies may have been the deportation of Greeks living in Egypt. In any case he deported Pythagoras to Babylon. Iamblichus has this to say about the Babylonian captivity of Pythagoras:

> He remained in the shrines of Egypt for twenty-two years, practising astronomy and geometry and being initiated into all the rites of the gods (not superficially nor haphazardly, I might add), until he was transported to Babylon by the

> followers of Kambyses as a prisoner of war. Whilst he was there he gladly associated with the Magoi, who were also glad to have him, and was instructed in their sacred rites and learnt about a very mystical worship of the gods. He also reached the acme of perfection in arithmetic and music and the other mathematical sciences taught by the Babylonians, remaining there for another twelve years, and returned to Samos at about the age of fifty-six.[30]

Apart from the scant information we learn about what Pythagoras did in Babylon, Iamblichus again assigns too long a period for Pythagoras' stay in Babylon. Iamblichus is following the chronology of Aristoxenus in some respects for he says that Pythagoras was fifty-six when he returned to Samos in about 513 B.C. This means that Pythagoras was born, as Aristoxenus had said, in 569 B.C. However, Iamblichus exaggerates Pythagoras' stay in both Egypt and Babylon, obviously to boost his hero's stock of learning. Here Iamblichus is over-zealous and leaves hardly any time for Pythagoras' migration to Italy. According to Iamblichus Pythagoras would have been around sixty when he finally arrived in Italy, a preposterous age and one which is conflict with the fact that Pythagoras must have been in Italy well before 510 B.C., the date of the war between Sybaris and Croton, an event at which Pythagoras was certainly present.

Likewise Iamblichus' account of Pythagoras' pursuits in Babylon is unsatisfactory. It is too brief and general. Iamblichus' biography was meant for popular consumption, but this superficiality is too much. He tells us merely that Pythagoras learnt a lot of mathematics and was initiated into the rites of the gods. Luckily Porphyry tells us a little bit more about Pythagoras' stay in Babylon. Porphyry's account is based on information derived from Aristoxenus, as we shall see presently. Porphyry[31] states that Pythagoras went to Babylon where he studied under the Chaldaeans and a sage called Zaratas. There is no need to associate the name 'Zaratas' with that of 'Zoroaster', as some critics do in order to discredit the whole incident of Pythagoras' Babylonian sojourn by pointing out that Zoroaster lived long before Pythagoras. Zaratas was not Zoroaster, but he was an important Magos of the Zoroastrian

religion. Thus Pythagoras' teachings owe something to the Iranian East. Porphyry says that Pythagoras learnt three things from Zaratas:

(i) how to purify himself from the pollutions of his previous life;
(ii) how the wise can be undefiled;
(iii) he heard a discourse about nature which examined the metaphysical principles in the cosmos.

We have already noted the importance attached by Pythagoras and his followers to the notion of ritual purity and purification in general. Zaratas apparently made Pythagoras one of the pure and divinely inspired by secret Magian rites. Zaratas then gave Pythagoras some precepts on how this purity could be maintained during the rest of his life. The Magoi were famous in antiquity for two things: astrology and drugs. The rites of initiation and ritual purity which Pythagoras underwent no doubt involved a cleansing by magical herbs and plants. The ancients were wont to purify their minds and bodies by means of hellebore, but many other drugs were also used, as we shall see later. Pythagoras was a believer in the magical and occult power of plants as can be seen from his use of the squill or sea-onion, possibly the littoral plant of that name, which was widely used in purificatory rites. Pythagoras maintained that this plant prolonged life and promoted good health.

The astrological side in the Magian teaching is also apparent in the mysterious discourse Zaratas delivered to Pythagoras concerning the metaphysical forces active in the cosmos. Porphyry does not tell us the content of this discourse, but we can reconstruct a large part of it from what Aristoxenus has to say about Zaratas' beliefs:

> Diodorus the Eretrian and Aristoxenus the writer on music say that Pythagoras visited Zaratas the Chaldaean. Zaratas expounded to him that there are two causes present in the universe from the beginning: the father and mother. The father is light, the mother darkness; the parts of light are hot, dry and light; those of darkness cold, moist, heavy and slow. From this it follows that the whole cosmos consists of the male and the female. He [i.e. Zaratas] said that the cosmos is a musical harmony. Thus the sun too completes

> an harmonious revolution. They [i.e. Diodorus and Aristoxenus] say that Zaratas had the following to say about the things born from the earth and the cosmos: there are two gods [daimones], one heavenly, the other infernal; the infernal god producing life on earth, the heavenly one forming the psyche (the life-principle in the cosmos, as against the bodily, mortal things created by the infernal deity). The psyche is a fire partaking of air, and hot and cold. Thus none of these things can destroy or pollute the psyche. This is the essence of all things.[32]

From this passage we learn that Pythagoras was initiated into the mysteries of Iranian dualism. This is the official message of Zoroaster: two gods, one of good, the other of evil. This dualism became a bugbear of later Platonism and Pythagoreanism; some Pythagoreans agreeing with it, others violently disagreeing. The later followers of Pythagoras and Plato, such as Iamblichus, Porphyry and Plotinus, were anxious to combat the notion that the cosmos is inherently evil. They wished to prove this because their Gnostic and Christian opponents, let alone the later extreme followers of Zoroaster, the Manichaeans, believed that an evil demiurge created the physical cosmos and imprisoned the psyches, sparks of light from the good deity, in the darkness of matter. The later Pythagoreans could not accept the idea of an evil creator, hence the reluctance of Iamblichus, and Porphyry to embark on a description of Zoroastrian dualism and its influence on Pythagoras. They wanted to overlook the fact that Pythagoras believed in a good and an evil god. With the exception of Plotinus who appears to have accepted the dualism of Pythagoras, believing that goodness was symbolized by light, evil by the darkness, the Platonists and Pythagoreans of the late Roman Imperial period rejected dualism and did all they could to exonerate Plato from the charge of having been a dualist. The traditional names of the two Iranian gods are Ahuramazda, the good god, and Ahriman, the god of evil. The former was a god of light and fire, the latter one of darkness. Pythagoras identified the darkness and evil in the cosmos with a malevolent deity opposed to the goodness of the god of light. Zaratas obviously thought that the 'mother' or female principle in the cosmos was the god of darkness and evil. The other attributes of

the female element in the cosmos are moisture and coldness, these being typical characteristics of the earth from which the evil god created bodily life. This feminine, material principle Pythagoras was later to identify with the dyad or two of the numerical series because two is an even number, the source of all other even ones. The even numbers are evil and infinite for a very good reason which will be explained fully later. The odd numbers from the One were finite and good. Pythagoras had a list of ten cosmic opposites which included such things as male-female, finite-infinite, light-darkness. These cosmic opposites formed the cosmic harmony.

The darkness and moisture of the earth formed animal and plant life and somehow lured the sparks of the divine fire earthwards to inhabit the gloomy earth. Zaratas taught that the psyche is fire which partakes of air, and is hot and cold. Likewise Pythagoras was said to have described the psyche as a fragment of ether or heavenly fire which shares in the hot and cold elements of the cosmos.[33] The psyche is attracted to the earth and is imprisoned in a mortal body fashioned by the god of evil. This is the Orphic doctrine of the body as a tomb (soma-sema, body-tomb). In later Pythagoreanism the process whereby the psyche becomes enmeshed in the body is portrayed as an evil enchantment: the psyche is deluded by the beauty of its own image reflected in matter. But Pythagoras did not have to invent such a magical myth because the descent of the psyche into matter was inevitable and occurred every 216 years. Incidentally it is interesting to observe that 432 was a popular number in the East for the period between each psychic incarnation, being double 216. If the cosmos was to exist at all there had to be both a male and female principle together with all the other cosmic opposites. Zaratas knew this too for he described the revolution of the sun, the source of fire and light, as a harmony like the rest of the cosmos. The main difference between Pythagoras and the Zoroastrians (and the monotheistic religions) is the affirmation of the cosmos as a beautiful harmony which is eternal. Individual solar systems may be destroyed, but the opposites in the cosmos still repeat the same harmonic patterns *ad infinitum*: the psyche still keeps being reincarnated every 216 years. Zoroaster, like some other religions, taught that the evil in the cosmos would eventually be

overcome, that the day of judgment would arrive and the absolute rule of the god of fire would begin forever. There is an end to the universe, and the evil cosmic opposites will be destroyed. Pythagoras, however, taught no such doctrine of a final redemption, an escape from the wheel of birth. The opposites in the cosmos form a beautiful harmony, audible to the ears of the divine Pythagoras alone, the music of the spheres. This belief in beauty, the aesthetic ecstasy of the Hellenic mind, saved Pythagoras from becoming religious in an oriental way. The Gnostics hated the world so much, despising its visible beauty, fearing the cosmic music of the stars and planets, that they dreamt of the day when it would be destroyed and a 'new heaven and new earth' descend from heaven; it is the old story of the New Jerusalem immortalized in the *Apocalypse*. One of the primal virtues of the Pythagoreans was courage: the will to face the eternal oscillation between life and death. Pythagoras was not as extreme as Heraclitus who delighted in strife and war and affirmed an eternal cosmos with endless struggle. It is no wonder that Nietzsche and other fascist philosophers were fascinated by the Pre-Socratic philosophies with their belief in eternal war and the endless repetition of the same in the universe. The Nietzscheans, however, lacked the aesthetic sense of the Hellenes (Nietzsche, for instance, could not appreciate the beautiful style of Plato) and above all their humanity.

Thus the cosmic evil for Pythagoras was not absolute: evil was somehow good because it formed a beautiful harmony. The evil in the cosmos was annoying because it polluted the psyche and caused psychic sickness. When the psyche was sick it lost its harmony and became ugly, ugliness being synonymous with evil. Thus one must avoid pollution at all costs. No wonder Pythagoras was fascinated by rites of purification practised among the Magoi. Pollution was caused by eating beans or meat, by murder and crimes resulting from greed and an excess of passion. The psychic harmony is disturbed when the reason is overcome by the desires. Drugs too could be employed to purify the psychic faculties. Above all the divine element of fire must not be polluted by burning bodies in it; Pythagoras[34] followed the teachings of the Zoroastrians in this, and the Zoroastrian 'Towers of Silence' can still be seen at Bombay as

testimony to the belief in the sacredness of the divine fire, the bodies of the Zoroastrian dead being left to decay on scaffolds above the earth and away from fire. Pythagoras, however, did not imitate this practice, but simply buried the dead.

The astrological beliefs of the Magoi and the Babylonians are also connected with the theory of opposites in the cosmos. Hence the stars were said to transmit moist and cold emanations to the earth which influenced the bodily structure of plants, animals, and men. The Greeks also borrowed the names of the planets from the Babylonians. Thus Venus or Aphrodite was named after Ishtar, the Babylonian goddess of love; and the planet Jupiter after Marduk, the chief Babylonian deity. More importantly Pythagoras learnt from the Babylonians that each planet had a numerical value attached to it. Hence Marduk = 10, Shamash, the sun = 20, the moon = 30, Ea, water = 40, Enlil, earth = 50, and Anu, the heavens = 60. The numerical values ascend by tens so that the decad or number ten had a primary significance for the Babylonians. This decimal numerical progression apparently represents the distances of the planets and elements from each other. This number-mysticism combined with astral theology formed the basis of Pythagoras' music of the spheres. Pythagoras defined music as the relations and interaction of numbers and their ratios so that the visible numbers in the sky formed the cosmic music. The later Pythagoreans also attached numbers to the gods; thus Zeus was the One, Hera nine, and Aphrodite five. The cosmic music of Pythagoras will be examined fully in a separate chapter; here it is only necessary to remark that the Babylonians influenced this idea of the music of the spheres. However, it still remains a unique achievement of Pythagoras.

Thus the Persian and Babylonian influences on the philosophy of Pythagoras are readily apparent. After Pythagoras had seen the wonders of Babylon and Egypt he returned to Samos. He would have appeared to return to Samos some time after 520 B.C. when he was fifty years old. Thus he had been amongst foreign peoples for nearly twenty years. He must have accumulated a formidable amount of learning and philosophic and religious ideas during his period abroad, and as soon as he had returned to Samos he began to teach. The content of this teaching forms the next chapter.

FOUR

RETURN AND EXILE

The biographies written by the ancients do not tell us how Pythagoras obtained his freedom from his Babylonian captivity. He is described by Iamblichus as being a hostage, not necessarily a slave. However, a prisoner of war is a euphemism for slave, I believe, in this passage of Iamblichus, as in antiquity most slaves were prisoners of war. Slavery was a fairly fluid state, slaves being able to buy their freedom with their wages in the Hellenic world. Thus Pythagoras could either have bought his freedom or used his charisma. The biographies seem to imply the latter is the case. Both Plato and Diogenes the Cynic were slaves for a time, but one of Plato's friends bought him from his owner and returned the philosopher to Athens. As Pythagoras was not redeemed by a friend, one must assume that he won over his harsh captors, the Persians, who were not above mutilating slaves to prevent them running away.

After Pythagoras had imbibed the teachings of Zaratas at Babylon, he decided to return to Greece and disseminate his ideas there. At this point in his life he must have formulated most of the doctrines which were to make him famous, but before turning to a detailed exposition of these philosophical ideas of Pythagoras one must examine the events which occurred on his return to Greece. There are many problems associated with this procedure for, although in agreement on detail, the ancient biographers do not agree on the date when he arrived back in Samos. We must first attempt to harmonize the conflicting evidence and attain an equable solution. Then an account of the style and method of his early teachings must be given, an account which will describe the birth of the legend of Pythagoras. Lastly, his initiations into the Hellenic mysteries and the cults of the gods will be investigated in order to

illuminate various aspects of Pythagoras' attitude to the Hellenic gods.

The first problem is to ascertain the date on which Pythagoras returned to Samos. If our preceding narrative of events is substantially correct, the date will be around 520 B.C. However, the two Neoplatonic biographers do not agree with this, but represent two extremes outside this mean. Porphyry,[1] following Aristoxenus, states that Pythagoras was forty years of age when he returned to Samos. This means that Porphyry had 529 B.C. in mind as the elusive date of the return from abroad. Iamblichus, as we have seen, believed the date was 513 B.C.; but we must first examine the account of Porphyry. In his biography Porphyry says on two occasions [2] that Pythagoras left Samos for Italy because the tyranny of Polycrates had become unbearable. Since Polycrates was crucified by the Persian satrap Oroetes in 521 B.C., Pythagoras, according to Porphyry, must have returned to Samos before that date. However, Porphyry adds that Pythagoras was forty when he returned, so that the exact year was 529 B.C.

Porphyry represents a very reliable tradition for he was following Aristoxenus who was in touch with the survivors of the Pythagorean school in Italy. But there are many objections to this date of Aristoxenus. It allows Pythagoras ten years at the most for his sojourn among the Egyptians and Babylonians. This is improbable owing to the fact that travel in the ancient world was very arduous and took a great deal of time. Also Pythagoras could not have learnt much in only ten years, and Aristoxenus is in conflict with the testimony of other writers on Pythagoras who state that Kambyses deported Pythagoras to Babylon in 525 B.C.[3] Also Porphyry's account of Pythagoras' travels and return to Samos is very confused and disorderly; at least Iamblichus presents a smooth narrative. The other ancient biographer, Diogenes Laertius, agrees with Porphyry, stating that Pythagoras returned to Samos from Egypt to find his homeland ruled by Polycrates so that in disgust he went to Croton in Italy.[4]

Porphyry and Iamblichus are in substantial agreement on what Pythagoras did when he returned to Samos. Porphyry is inevitably more concise than Iamblichus, but states that Pythagoras founded a school of philosophical teaching on

Samos which was situated in the famous 'semicircle' of Pythagoras (hemikyklion), probably a natural amphitheatre of rock overlooking the town of Samos. In later times it became a place of assembly for the rulers of the island. Here Pythagoras taught in the open air. Porphyry also describes the cave in which Pythagoras lived with a few of his disciples. The semicircle and the cave have the touch of Apollonius of Tyana about them. Apollonius, the Pythagoras of Roman times, did a lot of research into the provincial political systems of the Roman Empire of the first century A.D. and would obviously have paid a good deal of attention to Samos, the birthplace of Pythagoras. The locals may have told him that the semicircle or political assembly of the Samians was the original site of Pythagoras' school. Legend or not, the semicircle in its name at least is entirely in accordance with the mathematical mysticism of Pythagoras. The idea of Pythagoras in a cave is more interesting and will be examined further when Iamblichus' account is given. After Porphyry has described Pythagoras' journeys to Egypt and Babylon and stated that he returned when he was forty, he introduces the curious story of Astraios, the star-child whom Mnesarchus, Pythagoras' father, found under a pine tree on one of his business trips. Porphyry[5] says that Pythagoras learnt a lot about physiognomy by watching the strange movements of Astraios' face and body. The ancients obviously believed that Pythagoras could judge a person's character by observing his physical features for Pythagoras was very discerning when choosing members for his society which he was said to have founded in Italy. Porphyry attributes a similar knowledge of character to Plotinus whom he thought was divine.[6] Like Plotinus, Pythagoras was something more than human and knew the secrets of physiognomy from his studies of the motion and rest of Astraios' strange body. The implication of the story of Astraios is that the child came from the stars, abandoned by superior beings who inhabited the heavenly bodies. The Greeks, of course, had a great tradition concerning visits to the moon and other planets. Diogenes, from whom Porphyry borrowed the tale of Astraios, in his *Wonders beyond Thule* had described such visits. The cynical Lucian parodied these stories in his *True History*. Undoubtedly the Hellenistic period in Greek literature abounded with descriptions of the

inhabitants of other worlds. The Pythagoreans in general believed that all the planets in the solar system were inhabited, the dwellers on the earth being the most backward and pernicious of the lot. The farther one went from the earth the more perfect the beings on the other planets and stars became. Pythagoras and Plotinus go so far as to say that the beings who dwell in the distant Milky Way are almost disembodied intelligences and possess a very tenuous physical body. Iamblichus, as we have already seen, believed that Pythagoras might have been one of the superior beings who inhabited the moon or the sum. Likewise, Anaxagoras, the famous fifth-century philosopher, believed that other earths and solar systems abounded in space:

> Also men were formed and the other animate creatures; and the human beings possess flourishing cities and tilled fields, just as we do; they have a sun and moon and other stars, like us, and their earth produces an abundance of various crops. From these they collect the most beneficial in their houses and use them. I stated these facts about the segregation [or separating out of solar systems from the infinite seeds of matter] in order to prove that it does not only take place in our vicinity, but also elsewhere.[7]

The more intelligent beings inhabit the regions beyond the earth and, if someone can purify his psychic vehicle (consisting of an intelligible substance akin to light, but on earth is commingled with other elements), he can journey to the stars and beyond to join these intelligences. This is the fundamental reason for the purifications of Pythagorean philosophy: to return to the ether where one attains divinity. The etheric body shines within the one of flesh; by means of certain musical sounds, aromas, drugs and incantations it rides on beams of light towards the stars. Thus the whole universe for Pythagoras was inhabited by beings, some more or less material with bodies of fire and air, others immaterial, who were superior to men and who sometimes guided them. Astraios was one of these beings. The more physical of these beings, the ones with bodies more earthy and darker than the inhabitants of the stars, had malignant passions which could cause them to harm human beings; these were the followers of the infernal god of darkness. These

daimons had to be propitiated, and Pythagoras stressed the appeasement of the chthonic powers. Astraios was not the only being from another world whom Pythagoras encountered. Abaris, the Apolline priest from the land of the Hyperboreans (a land which some commentators have identified with the counter-earth or planet near the earth which blocks out our view of the central fire about which sun and planet alike revolve), flew down on a mysterious vehicle termed an 'arrow' by the Pythagorean biographers, but this may have meant something more complex than the Greek term denotes.

Iamblichus' account of Pythagoras' return to Samos is more detailed than that of Porphyry. According to Iamblichus Pythagoras was fifty-six years old when he returned to Samos in 513 B.C. Iamblichus says that Pythagoras was not an instant success on Samos, the Samians disliking his symbolic method of teaching which he had acquired in Egypt. Iamblichus describes his reception as follows:

> He was recognized by some older people and, as always, was an object of admiration. To them he appeared to be more handsome, wiser and more divine. The government called on him to be of benefit to everyone and to share his ideas. He did not object and tried to use his symbolic method of teaching which was similar in all respects to the lessons he had learnt in Egypt. The Samians were not very keen on this method and treated him in a rude and improper manner.[8]

None of the Samians had a genuine desire for mathematical knowledge so that Pythagoras had to bribe a poor boy to be instructed in mathematics. Eventually the boy became so interested in the problems that he was willing to pay Pythagoras to teach him.[9] Iamblichus believed that this boy's name was also Pythagoras, the writer who first taught athletes to eat meat as part of their training. Then Iamblichus does a strange thing: he has Pythagoras travel around Greece for some time and then return to Samos to establish the 'semicircle':

> About the same time [i.e. as his return to Samos in 513 B.C.] he is said to have caused a stir on Delos by approaching the so-called bloodless altar of Apollo, the

> progenitor of the Ionian race, and worshipping the god. Then he caught ships to the sites of all the oracles. He stayed in Crete and Sparta to study their laws. He studied all these phenomena and then returned home in order to renew the work he had left off. Firstly he formed a school in the city, the 'semicircle' of Pythagoras, which is known by that name even today, in which the Samians hold political meetings. They do this because they think one should discuss questions about goodness, justice and expediency in this place which was founded by the man who made all these subjects his business. Outside the city he made a cave the private site of his own philosophical teaching, spending most of the night and day-time there and doing research into the uses of mathematics, having the same frame of mind as Minos, the son of Zeus (who also stayed in a cave to consult his divine father).[10]

Thus Iamblichus believed that Pythagoras' stay on Samos and his visits to the neighbouring parts of Greece must have taken a long time. He visited all the oracles in Greece, according to Iamblichus, so that he must have spent close to five years in Samos and Greece after his return from Babylon and Egypt. This is quite impossible for we have already seen that Pythagoras must have been in Italy before 510 B.C., the date of the war between Croton and Sybaris, an event at which he was certainly present. Iamblichus would have us believe that Pythagoras arrived in Italy in about 508 B.C. when he was more than sixty years old. This is not plausible.

However, the above passage describing Pythagoras' journeys in Greece must have some historical basis; he may have visited Delos, Sparta and the oracles on his way to Italy, the conjecture of Porphyry. The incident of his worshipping at the 'bloodless' altar of Apollo is historical for one of the main tenets of Pythagoras was bloodless sacrifice. We also find traces of this belief in Empedokles, who refused to sacrifice animals because they may house the psyches of departed friends or relatives. Although Pythagoras is sometimes described as sacrificing animals (when he discovered the famous theorem about the right-angled triangle he was said to have sacrificed an ox), this is the result of the stories of Aristoxenus who, as a Hellenistic

materialist and sceptic, did not want his picture of Pythagoras to include strange or bizarre practices. Hence Aristoxenus ridicules the idea that Pythagoras did not eat meat or beans. Aristoxenus[11] says that he ate all flesh except that of the ox and ram. Thus even Aristoxenus would not have agreed that Pythagoras had sacrificed an ox for the sacrificial beast was later eaten by the worshippers. Apart from Aristoxenus and the invention about the sacrifice of the ox all the other ancient evidence indicates that Pythagoras refused to sacrifice animals. The later Pythagoreans totally agreed with him. Apollonius of Tyana would only burn incense in honour of the gods; Porphyry wrote a treatise on vegetarianism praising bloodless sacrifices and the offering of incense and plants instead of animals; Plotinus, too, was a vegetarian. Plotinus and Iamblichus also believed in the theurgic construction of 'agalmata' or statues of the gods consisting of herbs and incense and metals to attract the cosmic forces. Pythagoras revived the practice of bloodless sacrifice which according to Porphyry and other Pythagoreans had been the exclusive mode of sacrifice to the gods in the distant past when men were good and loved by the gods. Animal sacrifice was considered to be a recent and degenerate phenomenon in the eyes of the Pythagoreans, nearly as abominable as the eating of flesh and cannibalism.

The biographers agree that he journeyed to Crete both to study the laws of some of the Cretan cities and to be initiated into the rites of the gods. Iamblichus fixes this journey about 512 B.C., but it was more likely to have occurred around 520 B.C. just after his return from Babylon. His initiations into the mysteries of the Cretan deities will be discussed presently; here we must concern ourselves with his study of the laws and constitutions of the Cretan cities. Iamblichus in the above quotation mentions Crete and Sparta in the same breath because both of these Hellenic centres were Dorian and had excellent laws which were the admiration of the rest of Greece. The Dorians were late immigrants to Greece and had displaced such earlier inhabitants as the Achaeans and the Ionians. Pythagoras himself was an Ionian, but later in life adopted many Dorian customs. He favoured the dialect of the Dorians and their austere form of music. He may also have admired their laws, as Iamblichus suggests, and borrowed some ideas to be incorporated into the

rules of his society, though this is by no means certain. Plato, too, admired the laws of the Spartans and Cretans which appealed to the cruel streak in the Athenian philosopher. Iamblichus may be just anachronistically imputing this to Pythagoras who was not an inhuman person. The Spartan constitution was very stable, having been instituted by the legendary Lycurgus, and was one of the key factors in the strength of the Spartans. The Cretan cities were less stable, being always involved in internecine strife so that it is difficult to believe that Pythagoras could have found much to admire there, although the laws of Gortys were exemplary. Indeed, war and civil strife were said to have been eliminated by him in Italy. However, a famous institution in both Sparta and Crete was the 'syssition', a form of communal mess hall where meals and accommodation were provided. This communistic idea was the basis of the militaristic organization of both Sparta and Crete. Pythagoras modelled the society he founded in Italy on this Dorian innovation. Of course, Pythagoras' society was not a military instrument, but merely strengthened the solidarity of the members and promoted what the Hellenes termed 'homonoia' or a collective mental attitude which encouraged an atmosphere of peace and 'philia' or friendship. Pythagoras defined a friend as another self so that sharing everything submerged the differences between the members of the society. Shared meals and all goods in common became the most striking features of Pythagoras' organization. Pythagoras would not have liked the inhuman and regimented side of Spartan life nor their preoccupation with waging war. Pythagoras was an individualist who did much to encourage the spirit of freedom in Italy, traditionally the home of tyrants. But the problems associated with the political beliefs and activities of Pythagoras must be discussed later.

Pythagoras also founded a school on Samos, the semicircle, which may have embodied some of the ideas he derived from Sparta and Crete. His teaching became so famous that Greeks flocked to Samos to hear him. At the same time (around 520 B.C.) the mathematical sciences made great advances in Greece. For this Pythagoras was chiefly responsible. Iamblichus also said that he made his home in a cave outside the city of Samos. There are many caves in the hills surrounding the ancient site of

Samos, and to one of these Pythagoras withdrew with a few chosen companions. Iamblichus states that he was imitating the legendary king of Knossos in Crete, Minos, who went to a cave to converse with his father, Zeus, king of the gods. The Greeks always considered caves sacred to some deity or other, the sites of religious illumination, and there were many of these holy places in Crete. Two of the most famous were the Idaean and Dictaean caves. The incident of the cave is important in many respects for it was a harbinger of things to come. It helped to create a legend that was to influence the subsequent development of religion in the Mediterranean and the Near East. It was very unusual for ancient Greeks to live in caves, unheard of, in fact, before Pythagoras' revolutionary act. The Greeks, although the most individualist people of antiquity, nevertheless were essentially concerned with the activities of the community and the welfare of the city-state. To withdraw to a cave, even with a few companions, was a sign of misanthropy and a lack of community spirit. Euripides the dramatist was an anti-social type and retired to a cave, possibly acting under the inspiration of Pythagoras. We have noticed that Iamblichus described Pythagoras' hermit existence on the sacred mountain of Carmel where there was a solitary oracle of Zeus-Baal. To the Greek mind withdrawing from the community was a form of exile, one of the worst fates which could befall a human being. The plight of exiles is a recurring theme in Hellenic literature. Pythagoras' life, however, was a series of such self-imposed exiles, as though he were separate from the rest of men. By living in a cave Pythagoras created a myth which was to be imitated by such curious sects as the Essenes and the ascetic therapeutai. From these movements came John the Baptist and the Christians who later crowded the desert places in the Egyptian Thebaid, of course, living in caves. That Pythagoras' example inspired these developments in Palestine and Egypt has been demonstrated by Lévy.[12] Pythagoras, however, was developing a scientific method of mysticism, one based upon the paradigm of mathematics, not an emotional form of religiosity which became anti-human and degenerated into excesses of asceticism and religious dementia. The Essenes and their followers imitated the number-mysticism of Pythagoras, and in the words of an expert on the legend of Pythagoras: 'the Pythagoras of

legend conquered the Orient, and by the Orient, the world.'[13]

Before we examine the symbolic method of teaching which Pythagoras employed when he returned to Samos, Iamblichus' reason for his departure to Italy must be investigated. Iamblichus rejected the testimony of Aristoxenus that Pythagoras left Samos when he was forty to escape the tyranny of Polycrates, but has to provide a reason to harmonize with his own interpretation of events. Iamblichus states that Pythagoras left Samos for Italy because his fame in Greece caused him to be burdened with political and social duties by his fellow Samians who wanted to capitalize on his reputation:

> Of course, his later deeds caused him to become an even greater object of admiration. Already philosophy had made progress and the whole of Greece decided to admire him, so that the best and most philosophically-minded Greeks arrived in Samos because of him. They wanted to share in his teaching; but Pythagoras was dragged into all sorts of diplomatic missions by his fellow citizens and forced to participate in public affairs. At last he realized that it would be difficult for him to remain on Samos obeying his country's laws and philosophize as well. He knew that all the philosophers before him had ended their days on foreign soil so he decided to escape all political responsibility, alleging as his excuse, according to some sources, the contempt the Samians had for his teaching method. He left for Italy, considering that this country was the land which was fertile in an abundance of people willing to learn about his philosophy.[14]

This explanation of his departure for Italy on the part of Iamblichus is very plausible, based as it is on several sources, which, however, Iamblichus does not name. Possibly these were Heraclides Ponticus, Nicomachus and Apollonius. Thus Iamblichus did not invent this late departure of Pythagoras for Italy. Pythagoras left for Italy in about the year 518 B.C. so that he spent about two years in Samos and travelling in the rest of Greece. He would have been around fifty years of age when his departure for Italy took place. This is more probable than Iamblichus' date of 509 B.C. It was very natural for Pythagoras to want to avoid the demanding political and social tasks Samos

imposed on its citizens. The Hellenic city-states required their citizens to fulfil their public duties, unpaid of course. This often led to corruption in public life, even the great Pericles of Athens being charged with embezzlement. Pythagoras' avoidance of politics is symptomatic of the mystical nature of his message, and although there have been many attempts at interpreting his activities in Italy as political, it is certain that Pythagoras did not become involved in politics. The society he founded in Italy certainly influenced political events, but it was essentially mystical and apolitical.

Like the philosophers preceding him Pythagoras was anti-social and had no real country. He was the archetypal cosmopolitan who was at home in the whole world. It is a great pity he was not born a few hundred years later when Alexander had opened the Orient to Hellenic travellers; he would then have been able to journey to India and beyond. His historical impact would have been even greater. His Phoenician and Hellenic ancestry had enabled him to harmonize Europe and West Asia in his personality and he united in his philosophy the wisdom of Egypt and Babylon. Naturally he was above the provincial character of Greek politics. Thus he would not have wanted to become embroiled in the local politics of Samos. Also he apparently realized that Samos was a spent force as an independent state, for soon after Pythagoras had departed for Italy the Persians installed a puppet of their own choosing, the brother of the crucified Polycrates, named Syloson, who had given Darius the cloak in Egypt before he became the Persian king. Iamblichus also states that Pythagoras was annoyed with his fellow citizens because they had rejected his symbolic method of teaching. Iamblichus makes it quite clear that Pythagoras decided to spread his fame in the rest of Greece after he had been slighted by the Samians. As soon as he was famous the Samians wanted to use him for political purposes. This was typical of the mercantile aristocracy of Samos. Therefore Iamblichus' interpretation of events after Pythagoras' return to Samos from Babylon and Egypt is the most plausible, even though it is based on sources other than Aristoxenus. What was this symbolic method which Pythagoras employed and which the Samians disparaged?

The symbolic method which Iamblichus claims[15] Pythagoras

learnt in Egypt was a system of presenting abstract truths in an enigmatic way. These enigmatic allusions of Pythagoras and his later followers were known in antiquity as 'akousmata' or oral instructions in cryptic form. They were mainly of a moral nature and used to instruct the less intelligent members of the Pythagorean society in Italy. Thus these members became known as 'akousmatikoi' or people who learnt by akousmata. This and other distinctions within the Pythagorean society will be discussed in a later chapter. Iamblichus describes the akousmata as follows:

> In another way there were two types of Pythagorean philosophy because there were two classes of those who practised it: the acousmatics and the mathematicians. Of these the mathematicians were admitted to be Pythagoreans by the acousmatics, but the mathematicians denied that the acousmatics were Pythagoreans. The mathematicians said that the method of the acousmatics was not Pythagoras', but originated with Hippasos. Some sources say that Hippasos was from Croton, others from Metapontium. The philosophy of the acousmatics consists of undemonstrated and unexplained akousmata which are practical guides to conduct. There are also other akousmata which are sayings of Pythagoras. The acousmatics attempt to preserve these sayings as divine pronouncements; they neither claim to have anything original to say nor do they think this necessary. On the contrary, they regard those who have learnt the most akousmata as the most intelligent members of their group. All these so-called akousmata are divided into three classes in the following way: the first class are definitions; the second superlative definitions; the third guides to moral conduct. Examples of the first class are: What are the islands of the blest? The sun and moon. What is the oracle at Delphi? The tetraktys, or more precisely, the harmony in which the Sirens are present. Some superlative definitions are as follows: What is the most just? To sacrifice. What is the most wise? Number; a second answer to this riddle also being: that which gives names to objects. What is our wisest creation? Medicine. What is the most beautiful? Harmony. What is the most powerful? Judge-

ment. What is the best? Happiness. What is termed the truest statement? Men are evil. Therefore the Pythagoreans say that the poet Hippodamas praised the anonymous poet of Salamis who wrote:

'Gods, where do you come from? Why were you created thus?

Men, where do you come from? Why are you so evil?'

These are the sort of akousmata of the second class, each being a superlative definition. This method is the same as the wisdom of the seven sages. These wise men also sought not just definitions, but superlative ones; not what is difficult, but what is most difficult, which they defined as knowledge; not what is easy, but what is easiest, which they defined as following one's inclinations. Thus this class of akousmata seems to imitate the wisdom of the seven sages who were born before the time of Pythagoras. Examples of the third class are these: one should have children because one should leave behind worshippers for the gods. One should always put on the right shoe first; one should not walk along the beaten track; one should not dip one's hand into a sacred vessel of lustral water; one should not wash in a public bath because you don't know if the bathers are clean. Other akousmata include: don't help in lifting a burden because one should not prevent people working; rather one should add to the burden. Don't marry a woman with money. Don't speak without a light. Offer libations to the gods by pouring from near the handle of the cup for good luck, and so that no one will drink from that part of the cup. Don't wear a ring with an image of a god on it for it may get dirty; one should plant a divine image in one's house. One should not beat one's wife because she is a suppliant.[16]

This passage from Iamblichus is self-explanatory, including as it does much of the encapsulated wisdom of Pythagoras. Some of the akousmata were explained in antiquity, notably by Aristotle, but most of them are still enigmatic riddles. It is understandable that the Samians were irritated with this method of symbolic teaching because it resembles a series of rather childish riddles. Since the Greeks of his day were not educated in the arcane

sciences of Egypt and Babylon Pythagoras probably regarded them as children and sought to arouse their curiosity with these riddles. The later Pythagoreans always wrote in this same enigmatic way in order to keep their doctrines secret. Even Plato likes to include puzzling problems in his writings in imitation of such Pythagorean authors as Philolaus. His Pythagorean dialogue *Timaeus* is full of mysterious statements. In this way the Pythagoreans could publish their works, but only the wise could understand them. Thus their knowledge would not fall into the wrong hands. It is also interesting to notice that these akousmata resemble the hermetic oracles pronounced by the prophetess at Delphi and those of the other seers and sibyls of antiquity. Aristoxenus was so impressed with the similarity that he declared Pythagoras had learnt all his wisdom from the Pythia at Delphi named Themistokleia.[17] The resemblance between the oracular utterances of Delphi and the moral and ethical akousmata is most marked, and this is in accordance with Aristoxenus' stricture for he stressed Pythagoras' ethical debt to the Pythia or Delphic oracle. A typical response of the enigmatic oracle at Delphi is the following:

> Zeus grants the Triton-born a wooden fort
> To stand unharmed and be a last resort
> To save her people and preserve their seed.[18]

This oracle was uttered to the Athenians when the Persians were about to invade their homeland. The reference to a 'wooden fort' puzzled the Athenians until they realized that it meant ships. The oracle was notoriously ambiguous so that many people misinterpreted its pronouncements and came to grief.

The Samians[19] were offended with Pythagoras for proposing riddles to them, but they might also have been angered at his condescension and pride which addressed them in the mysterious language of the gods and their oracles. At this time Pythagoras doubtless believed that he was in possession of higher truths, and his sayings may have disturbed the Samians because of their novelty and their implications. The offending class of akousmata here would have been the first, the definitions. The superlative definitions, as Iamblichus points out, were well known in Greece through the activities of the

seven sages. However, if Pythagoras declared that number was the wisest thing, he may have met with derision from the Samians. They may have been slightly intrigued by the moral conundrums, but the more mystical and metaphysical definitions would have disturbed them. Thus the identification of the isles of the blest (the traditional heaven or paradise of Hellenic myth) with the sun and moon would have terrified them because they firmly believed that either the dead remain dead or at least stay on earth or under it. Being transported to the stars was suitable for the gods, but hardly for human beings. The location of the abodes of the dead on other stars and planets was part of the mystical revolution which Pythagoras initiated in Greece. Even two hundred years later this revolutionary mysticism was still not accepted by the mass of the Greeks. Mystical beliefs in immortality were only for the few. The implications of the statement that the wisest thing was number were also dire for Pythagoras because to the Greek mind the wisest thing was undoubtedly the gods. In time it dawned on the Hellenes that Pythagoras had meant just that: the gods are numbers. The Samians dimly intuited these trends in the sayings of Pythagoras and wanted nothing to do with him. Thus Pythagoras turned to the practical application of mathematics and taught the Greeks about arithmetic and geometry, but kept his mystical speculations about numbers for the initiates of his secret society in Italy.

During the years between 520 B.C. and 518 Pythagoras travelled around Greece, observing the customs of the people and being initiated into the rites of the gods. Porphyry has some interesting details concerning these initiations and Pythagoras' technique of preparing for them. Porphyry[20] says that Pythagoras visited the Idaean cave on Crete, sacred to the Idaean Dactyls, mystical deities, and was initiated by the hierophant Morgus. Porphyry[21] describes a typical preparation of Pythagoras for initiation into the divine mysteries:

> Usually whenever he was going to descend into the mysterious shrines of the gods and spend some time there, he used to eat food which banished hunger and thirst. He banished hunger by a mixture of opium poppy seeds, sesame and the bark of the squill which he washed thoroughly until it

> was cleansed of its surrounding layer of juicy pulp; he also included stalks of asphodel and mallow leaves, barley, wheat and chick-peas. The ingredients were equably weighed and cut and dipped in the honey from Hymettus.

It was usual for the Greeks about to undergo initiation to eat such a mixture, which was in fact the sacred 'kykeon' of the mysteries at Eleusis. The opium poppy was sacred to the goddess Demeter whose statues always appear crowned with them; the poppy was not only used to banish hunger and produce a feeling of well-being in the darkness and mystery of the caves and shrines of the gods, but also produced a state of acute wakefulness for up to eight hours as well as visual hallucinations which prepared the initiate for the arrival of the gods. In its last stages the poppy causes a mystical state between waking and sleeping when bizarre phantasms, both visual and aural, begin to manifest themselves. The initiate would then fall into a dream after the trance-like state of the preceding hours. It was in the dream that the god made his epiphany or appearance to the initiate. This was the usual procedure in the temples of the god of healing, Asclepius, whose devotees received cures in their sleep. The properties of the ancient squill are unknown, but it may have been another narcotic to produce endurance in the face of the fears in the dark. However, the most important ingredient in the mixture mentioned by Porphyry first was the opium poppy. Pythagoras knew the right proportions for the ingredients of the mixture, an art he later applied to the administering of medicinal drugs and which he had learnt from the Persian Magoi. We know this to be true because Porphyry[22] also mentions a substance called 'keraunian stone' which grew in the Persian Gulf and was celebrated by the followers of Zoroaster and which Pythagoras used to purify himself.

It may have been on one of these hallucinatory voyages that Pythagoras recollected his previous incarnations. In the twilight of trance Hermes may have appeared to remind him that he had been Aithalides who had gained the gift of recollecting all his earthly lives. With images of his previous existence drifting in his mind Pythagoras emerges from the grotto of some god, exalting in his newly discovered belief in immortality. Pythagoras was also initiated into the cult of the Samothracian deities,

the Kabeiroi, as well as many other gods' mysteries. Unfortunately he was not an Athenian so that he could not be initiated into the celebrated rites of Demeter and Kore at Eleusis. Porphyry gives some other interesting details about the rites of the Cretan gods: Pythagoras lying prostrate near the sea for days and nights, crowned with the wool of a black sheep.[23] He also went to the Idaean cave and spent the customary thrice nine days there, again wearing black wool. He made offerings to the dead Zeus and composed an epigram on the grave of the father of the gods. He also wrote an elegiac couplet for the dead Apollo, son of Seilenos, whom the Python killed at Delphi.[24] Pythagoras apparently believed that the Hellenic gods were deified mortals, not really immortal deities at all. In this rationalistic interpretation of myth he anticipated the famous Euhemerus who explained the myths relating to the Greek gods as arising from the wonderful deeds of ordinary mortals, usually kings. Thus Pythagoras did not accept the traditional anthropomorphic gods at all, but introduced new deities of his own: stars and numbers, the true immortals. He underwent the initiations in order to spread his fame amongst the Greeks, as Isocrates observed. This is not to say that he did not gain important shudders of divinity in these shrines, but he knew that the gods did not give extra rewards to initiates.

By now Pythagoras was entirely conscious of his mission and began to visit rulers in Greece in order to make himself known. It must have been on his way to Italy in 518 B.C. that his famous visit to Leon of Phlius took place, an important Hellenic ruler of the time. The dialogue between Leon and Pythagoras is described by Cicero:

> Inspired by whom [i.e. the seven sages] all successive men who devoted study to the contemplation of the universe were considered to be wise and named accordingly. That name of theirs lasted until the time of Pythagoras. It is said, on the authority of Heraclides Ponticus, the pupil of Plato, an especially learned man, that Pythagoras came to Phlius and had a long and learned discussion with Leon, the ruler of Phlius. Leon admired the man's genius and eloquence and asked him what art he was most proficient in. Pythagoras replied that he knew no art at all, but was a

> philosopher. Leon was amazed at this novel name and enquired who the philosophers were and what the difference was between them and the rest of mankind. Pythagoras answered that he thought the life of man was like a fair, the one considered to be celebrated with the greatest ostentation of athletic competitions and frequented by the whole of the Greek world [i.e. the Olympic Games]. Some people go there to seek the glory and nobility of victory in the athletic exertion of their bodies; some go to buy and sell in the hope of gain and profit; but there is a certain class of person, the noblest, who neither seek applause nor gain, but come only to watch and view intently what and how things happen. Likewise we are present as it were, at a thronging fair, come from some city; changing thus from one life and form to another some come to serve glory, others money, but there are a chosen few who study the universe, considering everything else of no importance. These people call themselves lovers of wisdom, in other words, philosophers. Just as at the Olympic Games the most honourable spectator seeks nothing for himself, so it is in life that the contemplation and knowledge of the universe far excels all other pursuits.[25]

Of course, many critics deny the authenticity of this account by Heraclides Ponticus, alleging that he is not a reliable source. The above passage relates at least one true fact: Pythagoras was the inventor of the term 'philosopher'. Also the parable of life being like the Olympic Games is consistent with the symbolic method of teaching practised by Pythagoras. The allusion to reincarnation is also in accord with the tale, being an historical event in the life of Pythagoras. Man passing from one life and form into another against the background of the world as a fair is entirely in harmony with the rest of the legend of Pythagoras. This parable or simile is the prototype of the famous dramatic likening of human life to a play. It is also in agreement with Pythagoras' mystical philosophy which valued theory and contemplation above action and worldly success. Contemplation of the cosmos or 'theoria' became an end in itself, the pursuit of the cultured few, in the time of Aristotle and Heraclides, but the idea itself is an original invention of Pythagoras.

After he had seen Leon, Pythagoras may have gone to Olympia to see the Games. Whilst sitting in the amphitheatre he is said to have shown his golden thigh to some of the other spectators. Needless to say he created a sensation, adding to his already growing fame. Some proclaimed the golden thigh as a mark of his divinity. Pythagoras was very fond of showing this deformity to those he met in order to impress them. Nobody really knows what the golden thigh signifies. One can disregard the conjecture that Pythagoras had jaundice at the time for he must have had a regularly recurring type of that illness. Probably it was a birthmark which Pythagoras used to demonstrate his favour with the gods. Gold was especially associated with Apollo, the god whom Pythagoras adopted as his own. When he showed his golden thigh to the people of Croton in Italy they immediately declared that he was the god Apollo incarnate. From Olympia in the Peloponnese Pythagoras could easily have reached the coast and taken a ship to Italy. He chose to go to Croton in Southern Italy, by no means the most prosperous town in Magna Graecia, but one which must have had a peculiar attraction for Pythagoras. Delphi and hence the god Apollo had played an important role in the foundation of Croton. Of course, the Delphic oracle had been a deciding factor in the settlement of most of the Italian colonies of the Greeks, but Croton was privileged in this respect. Myskellos, the legendary founder of Croton, had visited the oracle at Delphi; the god had told him to colonize Croton. Myskellos went to Italy, but did not like the situation of the future city of Croton so that he asked the god whether he might not settle at Sybaris instead. The god reiterated that he must settle at Croton. Myskellos obeyed him. Pythagoras must have known this story and thought that Croton had special significance for the god Apollo. Hence Pythagoras went to Croton, a favourite city of the god. The Crotoniates evidently believed in the importance which Apollo had attached to their city for the tripod, the symbol of the god, appears on many of the coins of Croton.[26] Before embarking on a description of Pythagoras' life at Croton, a brief introduction to the Greek settlement of Italy must be given.

FIVE

MAGNA GRAECIA

Iamblichus[1] tells us that before the arrival of Pythagoras Italy was little known in Greece, but after he had inspired the growth of philosophy in the Greek colonies of Italy, the land became known as 'Magna Graecia' or Greater Greece.

Italy had been known to the Greeks for centuries prior to Pythagoras' arrival there. The pre-Homeric Greeks, the Myceneans, also were familiar with the land, but no Greek colonies were sent to Italy before the eighth century B.C. Homer also knew about the more mundane aspects of Italy: it was a source of slaves for the Greek world. The Etruscan civilization in the north of Italy traded with the Hellenic world and was a source of metals, notably copper. The other indigenous peoples of Italy were not as developed as the Etruscans and therefore were easy prey for the Greek slave traders and merchants. Population pressures and political troubles in Greece caused the founding of Hellenic colonies in Italy. The Delphic oracle also played a major role in colonization. The oracle was rewarded for its good work by the mass of gifts and offerings left at Delphi by the wealthy inhabitants of the Italian cities. The first Greek colony in Italy was at Kyme on the bay of Naples. This city was founded in about 750 B.C. About twenty years later cities such as Naxos were also established in Sicily. The Greek colonists usually drove out the original inhabitants so that the culture of all the Greek colonies in Italy was purely Hellenic. There was limited contact with the native Italians, but the Greek colonies traded mostly with the homeland. Thus Pythagoras was not going to a foreign land when he set sail from the Peloponnese.

Croton, the destination of Pythagoras, was a colony of Achaean Greeks who had originally come from the northern Peloponnese. It was not the most important city in Southern Italy, and as regards trade and commerce was something of a

backwater. This may have been another reason why Pythagoras chose it. Croton had a small port, but the hills which surrounded it shut it off from trade with the interior of the land. It was vastly inferior in wealth and population to its northern neighbour, Sybaris, proverbial in antiquity for its luxury. Croton's growth was much slower than that of Sybaris and it was famous for its athletes and doctors. One of the neighbouring cities, also visited by Pythagoras, was Kaulonia, a colony of Croton. At the time of Pythagoras' arrival Croton was in a period of decline[2] from which the city was aroused by Pythagoras' influence. There is not much evidence to suggest that Croton was powerful at this time with an empire which stretched as far north as Paestum.[3] In the second half of the sixth century B.C. the Achaean cities of Southern Italy were allied with one another and had a common coinage. The Achaean colonies included Croton, Sybaris, Kaulonia, and Metapontium. Not much is known about the colonies in Southern Italy prior to the middle of the sixth century. We do know that the city of Locri was attacked by Croton in about 550 B.C., a war which ended in the defeat of the Crotoniates.

Although in political decline, Croton nevertheless managed to be fairly luxurious, a vice from which Pythagoras was said to have weaned the inhabitants. Yet there is some evidence to suggest that Magna Graecia at the time of Pythagoras was the hearth of a religious renaissance.[4] Some of the ancient Orphics, the predecessors in many ways of Pythagoras, such as Kerkops and Brontinos, came from Magna Graecia. There were also some votive tablets found at Locri which testify to the existence of a cult of Dionysus in the sixth century B.C. The famous golden tablets of the Orphics discovered in Southern Italy last century probably date from the fourth or third centuries B.C. In any case the religious life of the colonies in Italy would have been more conservative and settled than that in the cities of the Hellenic mainland, for they would not have heard of the rationalism of the Ionian philosophers. Pythagoras soon remedied that deficiency. If there was a religious renaissance in Italy at the time of Pythagoras it would have been inimical to Pythagoras because his teachings were not of the traditional kind. It is in vain to suggest, as does Delatte, that Pythagoras was a religious conservative who had no theological innovations.[5] Pythagoras'

rationalistic attitude to the ancient Hellenic gods has already been shown as has his devotion to numbers and star-worship. Even Iamblichus who stresses his piety towards the gods shows him as associating numbers with the worship of certain deities:

> Pythagoras says that men make three libations to the gods and that Apollo prophesies from the tripod because number first comes into being with the three [Pythagoras and his followers believed that one and two were not numbers at all, but the creators of number, the cosmic male and female principles]. Aphrodite is sacrificed to on the sixth day because this number six is the first number in the decad to participate in every sort of number [six was also known as 'marriage' because its multiples of 2 and 3 and odd and even, male and female numbers].[6]

But if the religious renaissance in Magna Graecia was of a different sort, one suggested already by the mention of the Orphics – an Orphic renaissance in fact – the situation would have favoured Pythagoras. The Orphics anticipated many of the discoveries of Pythagoras, Orpheus being already credited with the worship of number in a fragment quoted by Iamblichus:

> . . . just as Orpheus, the son of the Muse Kalliope, inspired by his mother near Mt. Pangaeum, said that the eternal essence of number is the most providential cause of the whole heaven, earth and the region in between. Likewise, it is the root of the continued existence of the gods and daimones, as well as that of divine men.[7]

If this 'Sacred Discourse' attributed to Pythagoras himself or his son or another follower is correct, then Pythagoras learnt the theory of the divinity of number from the Orphics, an hierophant named Aglaophamos having initiated him into the Orphic doctrines concerning numbers and their superiority to the traditional gods and daimones. The Orphics already in Italy may have prepared the way for Pythagoras and he may have known this, for it is unlikely that he would go blindly into this venture in Italy. He obviously knew what he was doing so that he must have had his reasons for going to a relatively insignificant town like Croton. It is worth noting that he did not go to Sybaris, for that centre of luxury would not have

accepted his message. Brontinus, whose daughter Theano later became Pythagoras' wife, was an Orphic and later became a follower of Pythagoras. The Orphics may have had influence in Croton, and Brontinus, being an influential citizen of that city, probably welcomed Pythagoras on his arrival. The Orphics were not orthodox in their religious beliefs for they believed in reincarnation and a blessed after-life with the gods for those who had been initiated into their mysteries. Lévy points out the similarity of the Orphic and Pythagorean heaven to the much later Christian one as described at Luke 22:30 (Lévy, *La Légende de Pythagore*, p. 134). The beliefs of the Orphics centred around the mystical deity Dionysus, especially the form of that god known by the name of Zagreus; this god, like the Osiris of Egypt, was a symbol of death and resurrection. The Orphics also had unusual creation myths, but they, like Pythagoras, owed a good deal to the Egyptian mysteries.

Most of the modern interpreters of Pythagoras understate his originality, preferring either to link him with more primitive systems of religion such as shamanism or totemism or to stress his moral and political reforms. Pythagoras is often viewed as a shaman, a follower of religious tribal figures who frequented the wilds of the north, fell into trances and made trips to the other world in order to consult the dead. Abaris, the priest of the Hyperborean Apollo, is supposed to have been a teacher of shamanic tricks to Pythagoras. Porphyry informs us that Pythagoras had a Thracian slave named Zalmoxis.[8] Thrace was a primitive country in the north of Greece, its inhabitants having a strong belief in immortality. Herodotus[9] relates that Zalmoxis was the slave of Pythagoras, received an Hellenic education, and on being freed by Pythagoras returned to Thrace where he hid in a secret underground chamber, pretending to be dead. He later surprised everyone by coming back from the dead. This convinced the Thracians that there was life after death. This is a typical shamanic trick, and the same story is told about Pythagoras.

Perhaps there were traces of the shaman in the character of Pythagoras, but this does not exhaust the genius of the man, neither does it explain his fame, for the Greeks would never have fallen for cheap tricks like that practised on the Thracians by Zalmoxis. To be successful amongst the intelligent and

sceptical Greeks one needed a more subtle approach. The Greeks were not easily led, and it was difficult to arouse religious enthusiasm amongst them. The Orphics and Pythagoras succeeded for a time, but even they lost favour eventually. Pythagoras was more than simply a totemistic figure and a shaman because the Greeks were not Thracians or Siberians.

Likewise Pythagoras was not just a moral reformer who created religious enthusiasm by his moralistic fervour.[10] To capture the attention of a Greek audience, even a provincial one in Magna Graecia, one had to have something new to say. It cannot be denied that Pythagoras changed the behaviour of the Crotoniates for a time, but this was not just the result of moralizing. It is strange that one writer[11] on Pythagoras' activities in Croton can proclaim in one breath that Pythagoras had no theological innovations and was just a moral reformer and then state that Pythagoras was a prey to hallucinations and taught the doctrine of the music of the spheres. The music of the planets and stars is the greatest theological innovation of Pythagoras, and he alludes to it in his speech before the rulers of Croton, a speech which will be examined presently. Pythagoras was a skilful artist of mystification, employing his rational knowledge to create supernatural situations. He often used his golden thigh, but on most occasions he would have used his knowledge of such things as the properties of numbers. Hence he may have asked an audience what a perfect or a friendly number was or employed the symbolism of the monad or the dyad to illustrate a point. This numerical mysticism has already been alluded to in connexion with his teaching on the gods.

This rational background to the success of Pythagoras must never be forgotten so that shamanism and totemism recede into obscurity. The number mysticism and the musical analogies are just the things which would have captivated a Greek audience because the Greeks loved music and rational explanations. Of course this technique would not have worked in Palestine or Thrace because the mentality of the people was different. One must not pretend that Pythagoras used primitive methods that he obviously knew would not affect a Greek audience. The sermon on the mount would have been just as inefficacious as a Siberian shaman's antics in front of an audience of Greek citizens.

The problem of the date of arrival of Pythagoras in Croton must now be discussed. There were two traditions in antiquity concerning this date: that of Aristoxenus and that of Timaeus. Both these historians of Pythagoreanism lived a few centuries after Pythagoras, but they are all we have. It has already been pointed out that Aristoxenus places the arrival of Pythagoras in Croton in the years 532–529 B.C., Pythagoras then being about forty years of age. On the other hand, Timaeus fixed the date of his arrival at 512 B.C. The truth lies somewhere in between if the present interpretation of events is correct. Pythagoras probably arrived in Croton in 518 B.C. when he was nearly fifty years of age. This may seem an extraordinary age to begin a new life in Italy, but it must not be forgotten that the general impression one gets of Hellenic life is that the people did not age as quickly as modern man. One has the situation of men of sixty and seventy walking around Greece and Italy teaching from city to city. Such names as Parmenides and Gorgias immediately come to mind. These were not isolated examples for there were thousands of aged philosophers and sophists in the ancient world. Thus the age of Pythagoras at the time of his arrival in Croton is no barrier to adopting the date 518 B.C. Of the ancient biographers Porphyry adopted the date of Aristoxenus, whilst Iamblichus vacillates between the two. On one occasion, at least, Iamblichus[12] states that Pythagoras arrived in Italy in the sixty-second Olympiad. This is the date of Aristoxenus, or about 530 B.C.; yet only a few pages earlier Iamblichus had stated that Pythagoras was fifty-six when he returned from Babylon to Samos, a direct conflict with the chronology of Aristoxenus. In another of his works Iamblichus[13] states quite definitely that Pythagoras arrived in Italy in the time of Polycrates (i.e. about 530 B.C.). Italy was in its prime at that date, according to Iamblichus' source, which is doubtless Aristoxenus, and Pythagoras won over the leading citizens of the Italian cities; he had two types of student, one older whom he taught by akousmata or oral instruction without rational explanation, the other sort being younger men whom he instructed by means of rational demonstration because they were young and alert enough to follow his teachings.

Iamblichus is oblivious of the discrepancy in his dates and appears to be simply transcribing his sources at random in order

to fill up his pages. He does not name either Aristoxenus or Timaeus, but one can judge what source he is using at any given time by the historical interpretation implied in the passage. The narrative of events in Iamblichus' biography with the long visits of Pythagoras to both Egypt and Babylon is the work of Timaeus who believed that Pythagoras came to Italy in 512 B.C. after a long apprenticeship in foreign lands. But Iamblichus cannot resist the authority of Aristoxenus and uses his date as the time for Pythagoras' arrival at Croton. Aristoxenus evidently only allowed a very limited time for Pythagoras' journeys to Egypt and Babylon, if he allowed time for them at all. Aristoxenus adopted a rationalistic approach to the interpretation of the Pythagorean legend and may not have wished Pythagoras to learn anything from the barbarians. One can trace elements of this Hellenic chauvinism in Aristoxenus' claim that Pythagoras learnt all his ethical teachings from the Delphic oracle. Timaeus, on the other hand, together with the majority of the sources of Pythagoras' life, stressed Pythagoras' debt to the Egyptians and Babylonians and Persians. Thus Timaeus is more in accord with the spirit of the legend of Pythagoras and closer to the reality of the sixth century so that his late date for Pythagoras' arrival in Croton, although needing slight modifications, is substantially correct. Of course, this may not have been Pythagoras' first visit to Italy. We have already seen that Pythagoras' father may have taken him to Italy when he was a child.

Now that the date of the Italian journey has been settled, Pythagoras' activities on arrival must be examined. All the biographers agree that immediately upon arriving he gave speeches to the Crotoniates and won over many of his auditors. Iamblichus says that Pythagoras had an audience of about 2,000 when he first landed in Croton.[14] He was also credited with having 600 close disciples, the so-called 'koinobioi' or those sharing in the communist life of the Pythagorean society. Porphyry[15], following Dicaearchus, a reliable source, describes Pythagoras as he appeared on the day on his arrival at Croton:

> When he came ashore in Italy and arrived in Croton, says Dicaearchus, he was like an extraordinary man come home after a long journey, his natural endowments well-

> supplemented by fortune. He had the appearance of a free man, was tall, and had great charm and elegance in his voice, bearing and other characteristics and so affected the city of the Crotoniates that the rulers bade him give some advice to the young men on questions relating to youth. This was after he had swayed the council of elders with many fine words. Afterwards he spoke to the assembled school-children; then to the women who were gathered together to hear him. After these speeches his fame increased rapidly, and he made many disciples from the city itself, not only men but also women. One of the women is especially famous, Theano by name; and he made many converts among the neighbouring region of the native inhabitants, including rulers and princes. No one knows exactly what he said to those assembled because the Pythagoreans have an exceptionally strict rule of silence.

Dicaearchus apparently knew that Pythagoras made several speeches to the people of Croton, but Porphyry is unwilling to specify the contents of these discourses. He says that he does not know what Pythagoras said exactly and goes on to give a broad outline of Pythagoras' philosophical tenets already quoted in the second chapter of this biography. Porphyry definitely knew of the existence of certain spurious speeches supposedly spoken by Pythagoras to the Crotoniates, but is unwilling to quote them. Porphyry adds that the Pythagoreans' rule of silence prevented anybody knowing what Pythagoras said. However, Porphyry exaggerates this vow of silence and one has the impression that it is sometimes an excuse for laziness on Porphyry's part in assembling more documents.

Iamblichus is not as reticent as Porphyry regarding the speeches of Pythagoras, but quotes them all. Iamblichus has some interesting things to say about the society Pythagoras founded at Croton, but these must be discussed later. Apart from this Iamblichus' account is rather disorderly, full of rather ill-digested information. The other biographer, Diogenes, is rather brief on Pythagoras' visit to Italy, but states that he made laws for the Crotoniates, had 300 followers,[16] adding that more than 600 people attended Pythagoras' nocturnal lectures.[17] Unfortunately Iamblichus is the only ancient biographer extant

who has much information about this period of Pythagoras' life. Iamblichus has preserved the contents of four of these speeches of Pythagoras. The speeches which Pythagoras gave in Croton, as quoted by Iamblichus, contain nothing unusual or unhistorical, nothing that could not have been said by Pythagoras; but it is precisely this colourlessness which makes them suspect. There is another discourse preserved by Iamblichus, the 'Sacred Discourse' circulating amongst the native inhabitants of Latium, the region around Rome, which has a very authentic quality, but this speech will be quoted and discussed later. The speeches given at Croton contain a programme of moral reform which aims to eliminate discontent among the citizens, producing a state of 'homonoia' or union of hearts and minds. This is the common thread running through the speeches, the symbol of this 'homonoia' being Pythagoras' injunction to the government of Croton to build a temple to the Muses, the goddesses of harmony. This has cosmic overtones because Pythagoras, according to Porphyry,[18] regarded the seven planets and the fixed stars together with the antichthon or counter-earth as the nine Muses, the harmony of all of them he called the goddess of memory, Mnemosyne. This goddess also appears in Orphic poems describing the initiates' journey after death to the other world. Thus the moral reforms embodied in the speeches have distinct cosmic and political implications. The first speech summarized by Iamblichus is that given to the youths in the gymnasium:

> After a few days he entered the gymnasium. With the youths crowding around he is traditionally supposed to have given them a speech which exhorted them to be zealous in their regard for their elders. He demonstrated that in the universe, in life, in cities and in nature precedence is due to that which comes first in time rather than that which follows; thus dawn is better than evening, the east than the west, the beginning rather than the end, birth not death. Likewise native inhabitants are better than new arrivals; similarly the leaders in colonial ventures and the colonists of cities have precedence. In general the gods are greater than the daimones, the daimones than the demi-gods, the heroes than the human race; amongst men

the procreators are superior to the young. He said these words by way of a captivating introduction to their valuing their parents higher than themselves. They owed, he said, such a debt of gratitude to their parents comparable to that which a dead man would owe to somebody who could bring him back to life. It is just, he went on, that they should love above all others those who are first and who conferred the greatest benefit upon them and that they should never offend their parents. Their parents alone have the pre-eminence of having given them life so that the real causes of the young ones' successes in life are the elders. When children prove that they are competing with each other in being kind to their elders it is impossible for them to offend the gods. It is reasonable that the gods would forgive children vying with each other in honouring their parents because children learn to honour the gods from their parents. Thus Homer magnified the king of the gods by the same appellation, calling Zeus father of gods and mortals. Traditionally many of the other myth-makers related that the rulers of the gods, Zeus and Hera, aspired to gain on their own the affection shared by children as a buttress to their existing union. For this reason Zeus and Hera each adopted the dual role of father and mother. Zeus gave birth to Athena from his head, and Hera procreated Hephaestus without any assistance from Zeus. The offspring had natures which were the opposite of their parents' so that they enjoyed an exclusive love. All those present agreed that the judgment of the gods was the most steady. Pythagoras proved that the Crotoniates should obey their parents willingly in emulation of their patron god Hercules whom they traditionally knew as having undertaken his labours in obedience to an older man. When he had completed his labours he founded the Olympic Games and dedicated them to his father Zeus as a token of his victory. He demonstrated that they should behave towards one another in a way that precluded their ever becoming enemies of their friends, and that they should become friends of their enemies as quickly as possible. They should practise the goodwill owed to their parents by being deferential to all older people. The affection for their own

brothers should be deepened by loving everyone else. Next he spoke about self-control, saying that youth was a test of character, because at that time desires are at their peak. He exhorted them to consider that self-control alone amongst the virtues is relevant for children, girls, women and the elderly, and especially for young men. He demonstrated that self-control alone comprised everything good appertaining to both body and mind; it preserves health and stimulates a desire for the best pursuits. This became clear when one examined the results of its opposite: on both sides in the Trojan war between the barbarians and Greeks there were many victims of terrible catastrophes owing to the lack of self-control on the part of one person. Some perished in the war, some on the return voyage, whilst for this crime alone the gods prescribed a punishment of ten and a thousand years. Apollo foretold the capture of Troy and the sending of the Locrian girls to the temple of the Trojan Athena. Pythagoras encouraged the youths to become educated; he bade them consider that it would be strange indeed if one judged the intellectual faculties to be the most important thing of all and deliberated accordingly about secondary pursuits, but not to expend any time or trouble in the exercise of the mind. Care of the body, a depreciating asset, they had in common with the basest of their friends, but education was the preserve of the noble-minded and lasted until death, and for some even after death it promoted eternal fame. He put together other such arguments, some from history, others from current beliefs, in order to demonstrate that education was the excellence which the leaders of each generation had in common, because it was their inventions which educated the others.

Education, he continued, was a thing of such natural importance that it was possible to receive it from somebody else, and yet the giver still retained it. Other praiseworthy possessions were either impossible to receive from others, like strength, beauty, health, courage; or the one who gave them away could not retain them like riches or power. Similarly some possessions are not in men's power to acquire, but one can be educated according to one's

> voluntary inclination. Then he said that one should go about governmental business not in a shameless fashion, but in an educated way. Training is almost the only thing which distinguishes men from animals, Greeks from barbarians, free men from slaves, philosophers from the man in the street. People with an outstanding skill are hard to find: thus only seven pre-eminently fast runners were discovered at the Olympic Games, all from one city. In the whole world there were only seven wise men to be counted. In later times, in which Pythagoras lived, there was only one outstanding philosopher [i.e. himself]. Pythagoras called himself a philosopher instead of a sage. This was the speech he gave to the young men in the gymnasium.[19]

This speech of Pythagoras, as quoted by Iamblichus, contains no obvious anachronisms which could date it as much later than the historical Pythagoras. The speech includes many commonplaces which were the property of the average Greek of the time. Thus the young men would recognize Pythagoras' allusions to the various grades of the gods, something important in the philosophy of the Pythagoreans, the necessity of revering the old, many of the myths used by Pythagoras as illustrations, and, of course, the topical allusions to the foundation of Croton. But there are many features in the speech which the young men would not be familiar with. Pythagoras' interpretation of the seasons and times of day, his exhortation to love one's enemies, later reiterated by the Platonic Socrates in the *Republic*, but not necessarily an anachronism coming from Pythagoras, would have been new to his audience. Other typically Pythagorean features of the speech are its intellectuality, its allusions to bizarre myths, the paradox about education, and, above all, the arguments which Pythagoras gives for the superiority of one virtue over its opposite. Pythagoras does not simply moralize, but gives arguments and always relates morality to political and social realities. After all, the political and social virtues are very low on the list of priorities in his mystical view of the world: they are a preparation for the purification of the initiate and his contemplation of numbers and the cosmic music. His stress on education would also have surprised his audience for the average Greek of this time was not well educated. In his

mention of the seven athletes and the seven sages there may also be a cryptic reference to his mystical theories about numbers. The mention of the ten and a thousand years as the punishment for crimes of passion tends in the same direction.

This speech of Pythagoras is not startlingly brilliant, but may have impressed the Crotoniate youth. One cannot be sure about the source Iamblichus used in his narration of this speech, but it must belong to at least the fifth century B.C. There are two reasons for this: first, no Pythagorean published anything much before this time, and, if it were later than the fifth century, it would almost certainly contain some anachronistic slips. Iamblichus is just summarizing the text and does not understand it very well, as can be seen by his garbled renderings of mythical and topical allusions. The original Pythagorean text was obviously in the Doric dialect, difficult to translate for a Greek of the later Roman Empire like Iamblichus. Iamblichus' gives epitomes of Pythagoras' other speeches to the children, women and council of a thousand Crotoniate elders, but it is only necessary to give an extract here of the last named in order to see how Pythagoras dealt with the rulers of Croton. The speech to the thousand begins with an exhortation to build a temple to the Muses and is important for the Pythagorean notion of 'homonoia' or the union of minds:

> When the youths informed their fathers about Pythagoras' speech, the council of a thousand summoned him to the council-room. First they praised him for what he had said to the youth and, if he had something else of benefit to say to the other Crotoniates, bade him tell them about it. His first piece of advice was to build a temple for the Muses so that the government could preserve the existing good relations amongst the citizens (homonoia). These goddesses all had the same name of 'Muses' and were traditionally associated together, taking pleasure in sharing the honour conferred on them. Moreover, the chorus of the Muses was always one and the same, including as it does harmony, concord, rhythm, and everything which contributed to the union of minds. Pythagoras demonstrated that the power of the Muses not only extended to the most beautiful theories in art and music, but was concerned with the concord and

harmony inherent in everything which existed. He said that rulers should consider themselves to have received their country as a pledge from the mass of the citizens. They should govern the city as if they were going to create an atmosphere of trust which they could bequeath to their descendants. They could certainly accomplish this if they remained equal to all the citizens and paid no heed to anything except justice. Men know that every country needs justice. The myths state that Themis, the goddess of right, has the same position next to Zeus as the goddess of justice has next to Pluto in the underworld. The law occupies the same place in cities so that, if a man does not do his job in a just manner, he will appear to be breaking cosmic laws. No member of the council has the right to swear by one of the gods, but should always speak words which are trustworthy without the aid of oaths. A council member should run his own household in a manner that will allow him freedom to refer any decision to the city. He should act honestly towards his children because even animals know how to do that. A member of government should behave towards the wife who shares his life as though marriage were a written contract; the contract with women being ratified in the children. They should not rely on their children loving them naturally (after all, parents are not responsible for this), but should gain their children's willing affection. Parents can achieve this by making it their purpose to be kind to children. Husbands should also strive to be faithful to their wives; and wives should not debase the stock by adopting an evil contempt for their husbands. Moreover, council members should realize that they accepted their wives under a truce as suppliants before the gods. They should be an example of order and self-control to the members of their household and to their fellow-citizens.[21]

This passage contains the essence of Pythagoras' moral and political philosophy: members of a city-state should strive to eliminate sources of friction and cultivate 'homonoia' symbolized in the cult of the Muses. The moral reforms of Pythagoras at Croton were not spectacular and were not his prime goal in

coming to Italy. He persuaded the governing class at Croton to give up their concubines in the interest of 'homonoia' and curtailed the luxury of the women. Lévy (op. cit., p. 322) relates the strict rules of the indissolubility of marriage to the similar injunctions of Christ; likewise he sees a connexion between the fact that women and children are mentioned together in the New Testament just as Pythagoras gave consecutive speeches to the women and youth of Croton. In the same context the Gospels mention the renunciation of riches. Pythagoras too exhorts the citizens of Croton to renounce finery and ostentation. However, the real message of Pythagoras lay in the Muses, the cult of the union of minds. Pythagoras' aim in coming to Italy was to promote freedom and equality among the city-states and to eliminate revolutionary discontent. 'Stasis' or internal revolution always plagued the Hellenic cities so that Pythagoras' moral reforms were intended to curb the greed and luxury which created glaring inequality amongst the citizens. Thus he says that the rulers should not distinguish themselves from the citizens, but should appear equal to them. Behind the speech to the thousand council members of Croton lie the revolutionary philosophical and religious ideas of Pythagoras. The Muses are symbols of the nine planets, of the harmonious world of the gods which is located above the earth. The cosmic music of the Muses should be imitated on earth by cities in order to create the harmony of minds. This is only a small fraction of Pythagoras' revolutionary attitudes to the gods and their cults. Men should strive to resemble the gods and create on earth a replica of the cosmic government. Everything on earth imitates the motions of the cosmos and the divine numbers which are the primal reality. This idea later became formulated in the Pythagorean theory of ideas, a theory commonly associated with the name of Plato, but, in reality, it arose from Pythagoras' contention that everything in the cosmos imitates number. Thus Pythagoras is not simply a moral reformer, but a revolutionary mystic who employed his ideas in a social and political context. This becomes clear when another speech of Pythagoras is examined, one which was circulating amongst the people of Latium, a region which later became the centre of Roman power.

This speech, entitled *The Sacred Discourse*, was apparently

delivered to the natives of Latium or was distributed amongst them in a Latin translation. We have already seen that Pythagoras made many converts among the neighbouring Italian tribes, a fact which the later Romans were proud of. It was unusual for a Greek to fraternize with the Italian barbarians, but Pythagoras was not an ordinary Greek. He believed in the equality of man and associated with the barbarians on an equal footing. In his speech the radical theological thinking of Pythagoras becomes most apparent: he treats the traditional anthropomorphic gods of Greece like cosmic powers associated with certain numbers. The speech has so many archaic qualities and so many typically Pythagorean features that it is impossible not to suspect that we have here the very words of Pythagoras himself. This is important because it has long been suggested that the actual doctrines of Pythagoras must remain unknown or very little knowledge about them can be ascertained. This speech is primarily concerned with the worship of the gods and the practice of piety towards them. The speech is also an interesting introduction to Pythagoras' veneration for number, a topic to be discussed in a separate chapter:

> The *Sacred Discourse* of Pythagoras was read among the people of Latium. It was not meant for everyone nor did they all read it, but only those who were fit for learning and did no wrong. Pythagoras said that men make three libations to the gods and that Apollo prophesies from a tripod because number first came into being with three. One should make a sacrifice to Aphrodite on the sixth day because six was the first number which shared in both odd and even numbers [2 x 3 being 6; 6 was also called 'marriage' by Pythagoras as it is a union of odd and even numbers, odd being considered male, even female]; and when six is divided in every way, the parts taken away are equal to those left [six is a perfect number: all its aliquot parts add up to six; cf: Theol. Ar. p. 42 (De Falco)]. One should sacrifice to Hercules on the eighth day at the end of the month in consideration of the fact that this god was a seven month child. Pythagoras also said that one should enter a temple wearing a white, clean

cloak in which nobody had slept, sleep being a sign of laziness as were black and flame-coloured cloaks [i.e. they were luxuries]. By wearing white one testified to the purity of a balanced mind and the justice in one's character. He proclaimed that no blood should be voluntarily shed in a temple; one should sprinkle lustrations from a golden vessel using sea-water because the sea came into existence first and gold was the most beautiful thing which was the standard measure of the value of all things. He said that no woman should give birth in a temple because it was unlawful for the divine element in the psyche to be chained to a body in a temple. He also announced that nobody should cut their hair or nails at a religious festival because he believed that these growths were good and should not escape the jurisdiction of the gods. Don't kill a flea in a temple, he said, because he thought the divine should not be saddled with the body of a worthless and destructive creature. He recommended that the gods should be worshipped with cedar-wood, laurel leaves, and those of cypress, oak and myrtle – one should never clean one's body or teeth with any of these leaves. He considered laurel to be the first born of the moist element and the food of the primal, more common form of matter. He forbade the roasting of boiled food, saying mellowness needed not anger. He would not allow the bodies of the dead to be burnt, in accordance with the teaching of the Persian Magoi, not wishing anything mortal to contaminate the divine elements. He deemed it pleasing to the gods to bury the dead in white vesture, symbolizing by this the simple and primal essence of number as the first principle of creation. Most of all he encouraged the taking of true oaths because, even though the future may seem far off to men, it is ever present to the gods. He said it was far more holy to be the victim of injustice rather than kill a man [one would be judged in Hades for this]; here he was taking into consideration the reincarnations which occur to the psyche as the primal essence of the existents. He indicated that coffins should be made of cypress wood because the sceptre of Zeus was of cypress or for some other mystical reason. He exhorted people to pour libations to Zeus the Saviour

> and the Dioscuri before they ate, praising the supplier and ruler of their daily bread, Zeus, and hymning Hercules as the power of nature, and the Dioscuri as the harmony of all things. He said that one should not pour libations with one's eyes closed because he considered nothing beautiful worthy of shame and bashfulness. Whenever there was a thunder-clap, he told people to touch the earth in memory of the creation of the universe. He recommended that temples should be entered from the right-hand side, regarding the right as the origin of the so-called odd numbers and hence divine; he believed the left was the source of the even numbers and the symbol of dissolution. Such was his method of teaching regarding the practice of piety towards the gods. Other things which I have omitted, can be guessed at from what has been said. Thus my tale of these things has an end.[22]

This speech is full of teachings which later tradition ascribes to Pythagoras. It is in fact an epitome of the whole philosophy of Pythagoras. The secrecy and exclusiveness of the Pythagoreans was proverbial and this can be seen in the prologue of this speech which specifies that it was not meant for everyone. Likewise in the epilogue the Pythagorean author which Iamblichus was following (or Iamblichus himself?) omits certain details on purpose. The significance of silence and secrecy will be examined together with the society founded by Pythagoras in the next chapter. The gods are associated with certain numbers, thus Apollo's tripod and the thrice-poured libations are mystical symbols of the properties of the number three, the first number, for the Pythagoreans considered one and two as the creators of number, not being numbers themselves. Thus one, although it is potentially both an odd and even number, called 'hermaphrodite' or 'male-female' by the Pythagoreans, is the source of odd numbers, whilst the two is the creator of the even numbers. Six is associated with Aphrodite, whilst eight is assigned to Hercules on account of the fact of his being a seven-month child. The numbers involved in the calculation of the time of pregnancies were cosmic ones, symbolizing the slow procession of the stars through the Zodiac; thus Hercules is also called the power of nature because the cosmic number is connected with

him through his seven-month birth. This number mysticism of Pythagoras will be discussed further presently. The speech also contains Pythagoras' views on sleep which he considered bad if over-indulged; the ideal was to stay awake as long as possible to avoid the irrational state of sleeping. The dislike for sleep went hand in hand with the abstinence from meat and beans because the eating of these foods encouraged drowsiness.

The speech also has some interesting practical suggestions concerned with the worship of the gods. One should wear white, symbolizing simplicity, for the gods and the numbers are simple, abstract substances, totally unlike the anthropomorphic deities of the traditional Greek myths. The gods should not be worshipped by blood sacrifice, but Pythagoras, not wishing to offend contemporary religious practices, does not openly avow this in his speech, preferring only to suggest bloodless sacrifices by proclaiming that no blood should be shed in a temple. The distaste for the killing of sacrificial animals is also visible in his recommendations concerning the worship of the gods by certain trees. The Pythagoreans preferred to worship the gods with plants rather than animals; hence they made offerings of oak, laurel or myrtle. Most plants were sacred to some god or other, thus the oak was the tree of Zeus, laurel belonged to Apollo, the rose symbolized Aphrodite and the vine was sacred to Dionysus. Pythagoras also erected statues to the gods which were not anthropomorphic, but shaped to resemble the cosmos. To these statues (agalmata) various plants were added such as rue, poppy or marjoram in order to attract the cosmic powers of the gods. Traces of this worship of the gods can also be found in the Orphics and Empedokles.

Pythagoras' cosmology and his theories concerning the origins of the world are also mentioned in this speech. Pythagoras says that sea-water is the first thing to come into existence. This is the doctrine of Thales and the Egyptians who believed that everything came from water. From this water the primeval mud emerged, but even before the mud came the laurel which was the food of this mud. Thus laurel is a very sacred plant. Also concerned in this creation of life are beans which arose from the primordial slime at the same time as man. Life was engendered in the water and the mud by a ray of sunlight which penetrated the depths of the sea. This ray of

light was obviously connected with the vivifying force in the cosmos, the psyche, which the Pythagoreans often associate with light or sunbeams. Thus Pythagoras forbids women to give birth in temples because the divine element of the psyche should not be chained to the muddy vesture of clay, the body, in a temple. The psyche is some sort of divine fire which is attracted to earth in order to animate the earthy element. The Orphics also believed that the body was the tomb of the psyche which had to be freed by purificatory rites. Hence Pythagoras employed sea-water to purify temples and the worshippers in memory of the cosmic creation when the psychic light first animated the waters. Curiously enough the Egyptians abominated sea-water as evil and unclean. He also recommended the touching of the earth when it thundered, a primitive enough gesture, but obviously with symbolic overtones: it was in remembrance of the creation of the universe. As Zeus is the god of thunder perhaps Pythagoras is referring to him in his role as cosmic creator.

There are also references to other curious Pythagorean beliefs. Thus Pythagoras says that hair and fingernails should not be cut at a religious festival; but the belief goes further than that for Pythagoras believed that these excrescences were the gods' property and should not be cut. In symbolic language the religious festival may also mean life. Pythagoras himself wore his hair long as did his followers and the Greeks had a proverb concerning the long-haired Samian with good tidings. One can assume that he did cut his nails sometimes. Pythagoras, as we have already seen, was a follower of certain customs of the Persian Magoi, and in this speech he forbids the burning of the dead because he considered fire to be divine. However, the most significant thing about this discourse to the Latins is the revolutionary beliefs concerning the gods which it contains. Thus the gods are identified with cosmic powers or the harmony of the universe. Numbers as the source of all reality are also there in the background, and there is a hint in the text that Pythagoras believed in the theory of ideas. This may be an interpretation of some passage in the original discourse by Iamblichus for all the later Platonists and Pythagoreans believed in the theory of ideas. Everything in the world exists because it imitates a number or idea or form as Plato called it: hence earthly justice

imitates the divine four which is the symbol of justice (this is because of the equality of the factors of four). So too the psyche is identified with number or the source of reality. Its incarnations are alluded to, and the necessity of avoiding bloodshed is given a cosmic significance because unpleasant incarnations occur when somebody commits a heinous crime. Thus you should love your enemies and prefer to suffer injustice rather than do wrong. Lastly Pythagoras refers to the table of Pythagorean opposites which included such things as right and left, odd and even; right is the source of odd numbers which are good, whilst left is the cause of even numbers which are evil.

This speech proves that Pythagoras had developed his philosophy to its full perfection before he arrived in Italy so that he must have been middle-aged by then. His activity amongst the Romans and the other Italian tribes was never forgotten by the Italian people and Pythagoras remained a mythical hero in Italy even after his fame had become eclipsed in Greece. It was in Italy in the first century B.C. that the philosophy of Pythagoras was revived. Even though he met many of the rulers of the Italian tribes and the Greek cities, Pythagoras apparently lived mostly in Croton. He married the daughter of Brontinus, Theano, and had a daughter named Damo and a son called Telauges.[23] His house at Croton became the object of superstitious awe, a thief having broken in one night, but dared not tell anybody the strange things which he saw. But Pythagoras still travelled extensively throughout Italy, performing many wonders as he went.

Most of the miracles which Pythagoras wrought occurred in Italy when he was at the zenith of his fame and activity. Before discussing and analysing his wonder-working, a summary of these miracles according to Aristotle is helpful:

> After these men came Pythagoras, the son of Mnesarchus, who first devoted his time to mathematics and numbers, but sometime later did not desist from the miracle-working of Pherekydes. Thus when a cargo-ship was entering the harbour at Metapontium and the bystanders were praying for its safe arrival because of its freight, Pythagoras came up and said: 'You will shortly see that this ship is carrying a dead body.' On another occasion, as Aristotle reports,

> Pythagoras predicted the appearance of a polar bear in Kaulonia. Aristotle wrote many other things about him; for instance, he relates that Pythagoras bit a poisonous snake to death in Etruria. He also predicted that there would be a revolution against the Pythagoreans; for this reason Pythagoras secretly left for Metapontium before the revolution. Once when he was crossing the river Kosas with some companions he heard a loud, superhuman voice saying, 'Hello, Pythagoras'. Those present became exceedingly afraid. Once he appeared in Croton and Metapontium on the same day and in the same hour. As Aristotle says, he was once sitting in a theatre and got up to reveal to the spectators that his thigh was golden.[24]

This list of Pythagoras' miracles according to Aristotle does not exhaust the wondrous tales told about him. Aristotle was quoted to show that Pythagoras' miracles were common knowledge even in the fourth century B.C. These miracles served as models for later biographies of philosophers and sages; thus the New Testament has many miracles which Pythagoras had performed centuries before. Pythagoras was following in the footsteps of Pherekydes, his teacher, who, as has been shown, was credited with many of the wonders of Pythagoras. Pythagoras' miracle of the fishes as narrated by Iamblichus has much in common with the story told in John 21: 6 and Luke 5: 4:

> At that time he was going from Sybaris to Croton along the beach and met some fishermen when their loaded net was still trailing in the depths of the sea. He predicted the size of their catch, even specifying the number of fish. The fishermen were ready to do anything he told them if his prediction came true. When they had brought the net ashore, he bade them let the fish go whilst they were still alive after they had counted them exactly. The amazing thing was that none of the fish remaining out of the water died during the time it took to count them. Pythagoras supervised the counting, then paid the fishermen the price of the fish and went on to Croton. The fishermen spread the word about what had happened, and when they had

> learnt Pythagoras' name from their children, they broadcast it to everyone. Those who heard about him wanted to see the stranger, which was readily achieved.[25]

This miracle was performed when Pythagoras had just arrived in Italy and established his reputation as a demi-god. The story is typical of Pythagoras' attitude to animals and sentient things: one should not eat them. Many other stories are told about Pythagoras' relations with animals, all pointing out the same moral of vegetarianism. Likewise the story of the divine voice greeting Pythagoras as he crossed the river Kosas in Italy (or the river Nessos in some versions) is often repeated in the New Testament, at John 12: 28 and Luke 3: 22, for example, only the protagonist there is different. The miracle of his being able to appear virtually simultaneously in Croton and Metapontium was often believed to be owing to his ability to walk on the water separating the two towns. The same story is not only told of Christ, but also of Apollonius of Tyana. Heraclides Ponticus, however, believed that Pythagoras rode on the flying arrow of Abaris the Hyperborean. A rather interesting category of miracle unique to the thaumaturgy of Pythagoras occurred when he reminded Myllias of Croton that in his last incarnation Myllias had been the Phrygian king Midas.[26] Myllias then went off to Phrygia to perform certain rites over the grave of the dead king which Pythagoras had prescribed. Pythagoras also caused many other people to recollect their previous incarnations. This process of 'recollection' or 'anamnesis' was popularized by Plato, and in the dialogue entitled *Meno* the Platonic Socrates reminds a slave of the geometrical knowledge he had acquired in the other world. For Pythagoras and Plato all knowledge was a recollection of previous lives and experiences. In this way knowledge became certain because it was based on the recollection of ideal mathematical forms and divine numbers in the Pythagorean heaven known later as the intelligible world. Pythagoras also taught many Italian rulers about reincarnation, and the Roman poet Ovid introduces Pythagoras teaching this doctrine to the ancient kings of Rome.

There are many miraculous tales told about Pythagoras and his rapport with animals. He forbade the eating of animal flesh and the wanton destruction of all animals except the most

noxious creatures. Thus he is described as having bitten a snake to death because it was poisonous. Otherwise he had only friendly encounters with the animal kingdom. He stroked an eagle at Croton and persuaded a bull not to eat beans.[27] He also let a snake go which had been captured at Sybaris. He told the Daunian bear to stop eating meat, and the bear evidently obeyed him. All these stories illustrate his ability to communicate with animals and achieve friendly relations with them. He was kind to animals not only because he reverenced life, but also because the animals might contain the psyche of a departed friend. Hence Pythagoras stopped a man beating a dog because he said he recognized the voice of a dead friend.[28] These lines of Xenophanes are the first description in Hellenic history of Pythagoras' belief in reincarnation. Animals were another way of demonstrating to the people of Italy, both Greeks and Italians, the truth of transmigration of souls or metempsychosis. He reminded others of their previous existences and it has been suggested that in one of his speeches to the Crotoniates he announced his four previous avatars.[29] The Orphics also believed in reincarnation, and the legendary founder of their sect, Orpheus, charmed the animal kingdom. The power of his music even extended to inanimate things like rocks and trees because the four strings of his lyre imitated the cosmic motions of the four elements. Pythagoras in this sense was another Orpheus for he believed that all of nature was alive and controlled the elements by music. Pythagoras could calm the waters and control the winds, another attribute of Christ, as Lévy shows (op. cit., p. 303), in the New Testament. He reverenced both plants and animals so that one of his later followers in the Roman Empire, Plotinus, could paradoxically assert that plants and animals could be happy in the cosmic life they all shared. This shocked contemporary opinion for the philosophers in A.D. 250 thought they had proved that only men could be happy. The belief in the happiness and life of plants and animals is an original doctrine of Pythagoras and Orpheus, and Pythagoras' biographers in the late Roman Empire revived this belief along with many others so that Porphyry and Iamblichus as followers of Plotinus and Pythagoras were in a unique position in their ability to interpret sympathetically many of the beliefs of Pythagoras that seemed archaic and primitive to non-Pytha-

goreans of the time. Thus the biographies of Porphyry and Iamblichus are in many ways superior to the earlier ones of Aristoxenus and Timaeus because the latter two did not have an intuitive sympathy with the beliefs of Pythagoras.

There are also many stories concerning the wonders Pythagoras wrought by the power of his music. But since his musical ability is to be discussed in a separate chapter, only a few examples will suffice here. He was very fond of singing the verses of Homer, especially the passage in the *Iliad* which described the death of his avatar Euphorbus. He sang and accompanied himself on the lyre to calm the minds of his companions and illustrate the truths of reincarnation. He even cured madness by the music of his lyre and developed a subtle modulation of traditional Hellenic melodic modes for this purpose. He was a prophet who predicted earthquakes and the deaths of friends so that his first years in Italy must have made a deep impression on the minds of those who associated with him. Pythagoras did not just wander about haphazardly in Italy but created a society of followers which shared his teachings. It is to the creation and influence of this society which we now must turn. We have examined in this chapter the moral reforms and the revolutionary attitude to the gods which Pythagoras introduced into Croton. His miracles drew attention to the man and enabled him to spread the tidings of his revolutionary philosophy. Now the organization of this society and its political impact, if there was in fact any, must be discussed.

SIX

THE SOCIETY

There is a great deal of controversy about the society which Pythagoras founded in Italy after his arrival there. Disputes have always arisen as to whether Pythagoras was involved in politics or not, and whether the society he established at Croton was politically orientated. It is to be argued here that the society was not a political organization, but a mystical and philosophical one, modelled on the Orphic communities of Greece and Italy. There were certain political consequences of the teachings espoused by the members of the society, but it never actually governed Croton or any other Italian city, whilst Pythagoras himself remained quite aloof from political involvement. The circumstances surrounding the foundation of this society must first be investigated; then the structure and hierarchy within it examined together with an analysis of the activities of the members. Then the claims and counter-claims concerning the alleged political implications of the society and Pythagoras will be perused.

If we are to believe Iamblichus, Pythagoras founded his society immediately upon his arrival at Croton. Iamblichus, whose source here is Nicomachus,[1] states that he established a communist society at Croton which one could almost call a state within a state. The following description of the founding of the society is so enthusiastic and extreme that one must doubt its historical veracity:

> The illustrious city of Croton was the first place where Pythagoras by his exhortations gained many disciples, so that history informs us that he won over six hundred people. They were not just enthusiastic about the philosophy which he imparted, but were what is called the

communist members who shared a common life according to his instructions. These six hundred were the philosophers; but there were many auditors, the so-called 'acousmatics' whom he made his followers at only one lecture which, as the sources state, was a public one, the very first he gave, upon his arrival in Italy. More than two thousand were won over by his speeches and became so totally involved that they did not return to their homes, but together with their wives and children established a Pythagorean school of large proportions and founded the city of 'Greater Greece' as it was called by all. They received laws from Pythagoras together with instructions which were like a divine covenant which they followed meticulously. With one mind they remained with the crowd of followers, honoured and blessed by their neighbours; they had their possessions in common, as has been stated previously, and counted Pythagoras as nearly one of the gods, as if he were a kind of good and philanthropic daimon. Some called him the Pythian, others the Hyperborean Apollo, others still the Paian; some even suggested he was one of the supernatural inhabitants of the moon. Others rumoured that he was another Olympian god in human form whose epiphany to their contemporaries spelt a beneficial regeneration of mortal life for he came to bestow on humanity the redeeming spark of happiness and philosophy than which no greater good had come or would ever come as a gift of the gods. Thus even today there is a proverb which proclaims the long-haired Samian in the sublimest way.[2]

This passage is exaggerated in some ways, but may have a kernel of truth in it. It is hard to believe that Pythagoras immediately upon his arrival could have had some two thousand or more listeners. It is improbable that he could have converted them all to such a novel way of life. One detail which especially stands out in this account of Iamblichus is the founding of some sort of social entity called 'Greater Greece'. It may not have actually been a city within a city, but may have simply been the society as it was seen through the overwrought imaginations of Nicomachus and Iamblichus. The establishment of the communist community must have been more gradual

because a sudden conversion of this magnitude would have disturbed the council of elders. Even so one cannot doubt the charismatic appeal of Pythagoras and his new social experiment. The society is an historical fact which certainly came into existence owing to Pythagoras' inspiration. One cannot help feeling that the people of Croton had been prepared by the Orphics and religious communities for the life proposed by Pythagoras.

The society as described in the above passage is a religious and philosophical one even though there are distinct political overtones. Thus Iamblichus speaks of the laws of the community and its resembling a city within a city as though the members separated themselves from the rest of the inhabitants of Croton. The actual term used to describe the society is 'homakoeion' or a place where people could gather together to hear the views of Pythagoras. From the first it was Pythagoras who was the head of the school, and it has other hierarchical features. Thus there were 600 members who were 'philosophers' as distinct from the 2,000 akousmatics. These hierarchical distinctions will be examined thoroughly later. Here one need only remark that the sifting out of the 600 philosophers from the mass of the akousmatics must have taken some time and could not have occurred in the twinkling of an eye as Iamblichus suggests. Pythagoras had founded a 'homakoeion' in Samos before he ever came to Italy and there the community was distinctly philosophical. The same is the case in Croton for the members of the society describe Pythagoras in religious tones as a daimon or god come to teach them about philosophy. The society described by Iamblichus has no political ambitions, but is gathered together to hear the religious and philosophical message of Pythagoras.

From the first, then, Pythagoras was the undisputed leader of the society. His followers were willing adherents of his philosophy because they considered him divine. There is also a certain consistency about the nature of his divinity for most of the epithets given him by his admirers refer to the god Apollo. Pythagoras taught a philosophical religion based on the worship of Apollo, and this may be the cause of Croton issuing coins with the tripod of Apollo depicted on them.[3] It must be remembered that the patron god of the city was Hercules, as

Pythagoras pointed out in his speech to the young men (cf. Ovid, *Met.* XV, 15f.). If this is the case then the society had permeated the life of Croton to an unparalleled degree. Pythagoras must have represented himself as some sort of prophet of the god Apollo. His golden thigh would have established his pedigree because the god was sometimes thought to have had a tattoo on his left thigh. This may have been the result of his being worshipped in the north of Europe where the people employed tattooing, for the practice is unknown amongst the Greeks. This is corroborated by the fact that whenever people saw the golden thigh of Pythagoras they immediately proclaimed him as the Hyperborean Apollo or Apollo from the north. Some of the new converts in Croton did in fact call Pythagoras the Hyperborean Apollo because Pythagoras obviously showed them his thigh. Other converts referred to Pythagoras as the Pythian, the name of Apollo in his role of the god who prophesies at Delphi through the mouth of the Pythian priestess. By this name his followers were alluding to his prophetic gifts. Likewise the name 'Paian' is another designation of the god Apollo as the healer, the god of medicine. Pythagoras professed healing powers and stated that he came to the cities of Italy not to teach, but to heal. Empedokles, the prophet of Akragas in Sicily, also claimed to be a healer. There were other more subtle ways in which the influence of Apollo came to be felt within the society. Thus the One, the source of number, and the object of supreme veneration amongst the Pythagoreans was known by the name of Apollo. The reason for this rests upon a fanciful etymology of the name of the god: A- means 'not', whilst 'pollon' 'many', thus Apollo or Apollon in the Greek is not many, i.e. the One. The One was also called 'Hyperion' in the sense of the literal meaning of that word 'he who passes over,' the One being thought to transcend all number. Plotinus refers cryptically to this latter etymology at V5, 13, 19 (H.S. vol.2, 1977), although the editors of the text did not notice it. Hyperion is another name for Apollo in his role as the sun-god. The sun later became a symbol of the One because just as the sun creates all life in the cosmos, so the One creates all the numbers in the invisible cosmos.

This divinization of Pythagoras established his absolute

authority within the society. All the laws he gives are to be obeyed because they are divinely inspired, if not by Apollo, then by one of the Olympian gods or a supernatural inhabitant from the moon. This last characterization of Pythagoras is strange coming from citizens of Croton at this time and may be the result of later philosophical speculation about the inhabitants of the moon and the beings which dwelt on or near it. Greek myths are full of stories about gods visiting the earth, and many law-givers in Greece were considered divine. This belief that every word Pythagoras uttered was divinely inspired had some good and bad results. It certainly promoted the ideal of 'homonoia' or the unity of all minds in the society whereby no disputes arose concerning the laws and philosophical ideas taught. The fact that the members of the society shared all their belongings also contributed to this ideal. The idea of the unity of minds and belongings is ultimately inspired by the mystical intuition that there is one true interpretation of reality. It does not refer to any pantheistic notion that everything is one god or all is one. Nor does it imply the belief in a group spirit or identity personified in Pythagoras, this totemism being alien to the Hellenic mind. It means that all were equal in the vision of the truth of Pythagoras' philosophy. Everyone in the society thought the same thing, owned the same things, and did not deviate from Pythagoras' philosophy which in religious terms was extremely polytheistic, and in philosophical jargon was pluralistic. This is necessarily so owing to Pythagoras' believing in numbers and their various manifestations in the cosmos. We have already examined this revolutionary polytheism with its gods associated with numbers. As this philosophy developed, members of the society contributing their original ideas, Pythagoras was still credited with all these innovations. As the source of inspiration to his followers Pythagoras still enjoyed supreme authority within the Pythagorean society even after his death for the Pythagoreans attributed each new doctrine to the master himself. Their way of doing this is expressed in the dictum: 'the man said' ('autos epha', Lévy regarding this as the forerunner of the New Testament 'son of man': *La Légende de Pythagore*, p. 303) or, in other words, Pythagoras is responsible for all these new thoughts.

During Pythagoras' lifetime the Pythagorean society flouri-

shed and after his demise it developed without interruption. In fact, no other philosophy in antiquity developed so rapidly and along such original paths. The changes and modifications of the original doctrines of Pythagoras were incorporated in the existing body of beliefs by accommodating them to the omnipresent spirit of Pythagoras. Finally the developments became too diverse and the pristine 'homonoia' was lost by a series of schisms and revolts within the ranks of the society. The numerical philosophy produced such startling results that some members divulged the secrets of the master and created their own movements. Hippasos revealed the properties of the dodecahedron and was expelled from the society. Empedokles learnt all he could from being a member of the society, then left it to write his famous poems full of Pythagorean lore. Publishing Pythagorean beliefs, of course, was forbidden, for, as we shall see, Pythagoras demanded a vow of secrecy concerning his doctrines. In the fifth century B.C. also Philolaus (it is rumoured, because he needed the money) wrote his fascinating books which were purchased by Plato who, in turn, embodied these Pythagorean beliefs in his own works. From then on Pythagoreanism became a public phenomenon, but its adherents still harked back to the original inspiration of Pythagoras so that in the third century A.D. Iamblichus and Porphyry sought to rehabilitate his reputation by showing that most of the developments in Platonic and other philosophy were due to him. Even amongst these late Pythagoreans the vow of secrecy was still adhered to, as can be seen from the fact that we know nothing about the Pythagorean doctrines of Ammonius of Alexandria, the teacher of Plotinus and hence of Porphyry, who was in turn the teacher of Iamblichus. But the original 'homonoia' had been lost in the generation after Pythagoras' arrival in Italy even though the bulk of the members still kept silent and obeyed the rules of the master. Paradoxically enough then the absolute authority of Pythagoras did not hinder original developments, rather it stimulated them. Amongst the philosophical members of the society there must have been a free interchange of ideas, the only conformity being in the attributing of the original ideas to Pythagoras. We do not know whether Pythagoras demanded this honour, but such demands are foreign to his own eccentric and liberal character. His

followers probably chose to adopt this policy of suppressing their own individuality in honour of the master. However, even though the members of the society chose anonymity we know a great many of their names. In fact, no other philosophy in antiquity has a longer list of outstanding men. The philosophy of Pythagoras as embodied in the late Platonic Academy in such towering geniuses as Proclus who even outshines Plotinus in philosophical acumen and breadth of knowledge was the last free expression of thought before all rationality succumbed to the 'Dark Ages' of Christianity.

Thus 'homonoia' preserved the identity of the original society for many generations, but it could not arrest the schisms which occurred later. The two original hierarchical divisions of philosophers and akousmatics split into separate groups and developed along their own lines. The philosophers or 'mathematikoi' denied that the akousmatics were true followers of Pythagoras, whilst the akousmatics were ready to admit the philosophers as followers of the master, and still insisted on their own orthodoxy. The philosophers termed the akousmatics followers of the schismatic Hippasos. Some of the akousmatics developed into the wandering 'Pythagoristai' who begged and lived a precarious life in poverty and strict conformity to many of the doctrines of Pythagoras such as vegetarianism, not bathing in public baths like Plotinus (hence they seldom washed), the growing of their hair and fingernails, and a fanatical belief in immortality and reincarnation. The society of Pythagoras founded at Croton did not have any influence on the politics of that city nor on any other. It has been suggested that the Pythagorean society at Croton governed many Italian cities at this time,[4] although there is no historical evidence for this. There are some indications that Croton, although in decline before the arrival of Pythagoras, recovered much power and prestige after the society was established.[5] This resurgence of Croton is perhaps mirrored in the increasing number of victories Crotoniate athletes gained at the Olympic Games. Milon, one of the most famous of these Crotoniate athletes, became a follower of Pythagoras, as did many others. Just as the athletes had their own gymnasium where they trained, so too it is conceivable that the Pythagorean society had its own complex of buildings which, according to Iamblichus, the Pythagoreans constructed

in Croton. There the members lived together sharing everything.

The structure and rules governing this society must now be examined. We have already seen that it was a hierarchical system with Pythagoras as head. Its structure in the beginning was twofold, the philosophers on the one hand, the mass of the akousmatics on the other. The philosophers were fewer in number than the akousmatics and no doubt represented the young people who were able to follow the mathematics of Pythagoras; the akousmatics included the older people together with their families. Thus admission to the society was not restricted to men and its members included many women. It is a misnomer to refer to the society as a 'brotherhood'. The Pythagoreans and their later offshoot, the Platonists, were the only ancient philosophical sect which produced outstanding women philosophers, the most illustrious being Hypatia of Alexandria who lived in the fifth century A.D. and was martyred by being torn to pieces by a Christian mob. In fact the Pythagoreans and Platonists were the only ancient philosophical schools to allow women to share in the teaching, a characteristic which led Lévy to compare Christ and his women followers, the three Marys (*La Légende de Pythagore*, p. 309). Iamblichus has the following to say about the divisions within the Pythagorean society:

> Now let me state how he categorized each of the members he had chosen according to their worth. It was not appropriate that all members should share equally in the same things. Nor was it fitting for some to partake of all the esteemed ideas, whilst others were left out completely, for this would be unsocial and unfair. By meting out to each member an appropriate share of the key doctrines he benefited all as far as possible and preserved the just mean by granting to each in the greatest degree the teaching he was worth. Following this line of argument he called some members 'Pythagoreioi', others 'Pythagoristai', just as we call some writers Attic (who employ the literary language of ancient Greece correctly), and others collectors of Attic expressions; by distinguishing thus he coined a suitable name for the genuine Pythagoreans [Pythagoreioi], and

> instituted one denoting the followers of the genuine Pythagoreans. He ordained that the genuine Pythagoreans should have their goods in common and lead a communist life for all time; he bade the others retain private property and come together in the same place to associate with each other.[6]

Apparently another name for the genuine Pythagoreans was 'mathematikoi' whilst the followers or 'Pythagoristai' were also known as akousmatics. One interesting feature about the above passage is that it states that only the genuine Pythagoreans had their goods in common, the followers or akousmatics retaining their private property. Also the mathematikoi live together whilst the akousmatics have private homes which they leave to attend the lectures. This contradicts the first passage quoted from Iamblichus in which the akousmatics had their goods in common and lived together in the 'homakoeion'. It is distinctly stated there that the akousmatics left their homes to found the new society. Thus it seems more likely that the second passage is correct and that the bulk of the followers, the akousmatics, retained their private property and did not live together in the Pythagorean community. Thus in the beginning there were two main divisions in the Pythagorean society. Later, however, other categories were introduced as the following quotation demonstrates:

> Some of Pythagoras' followers devoted their time to theory and were called 'sebastikoi' [august]. Others concerned with human affairs were termed 'politikoi'. Those who were involved with mathematics, geometry and astronomy were entitled 'mathematikoi'. Of these the ones who had been pupils of Pythagoras were called 'Pythagorikoi'; the disciples of these were termed 'Pythagoreioi', whilst the rest of the exoteric followers were known as 'Pythagoristai'.[7]

The classifications introduced here are obviously from the writings of Aristoxenus who, according to Delatte,[8] was describing a later stage in the evolution of the society. Certainly the classifications known as the 'Pythagorikoi' or pupils of Pythagoras and their disciples, the 'Pythagoreioi', belong to a later phase in the society's development when Pythagoras was

dead and his pupils took over. The political Pythagoreans too belong to the time when the Pythagoreans became involved in politics. But the 'sebastikoi' were the leading members of the inner circle; other esoteric Pythagoreans were the 'mathematikoi', whilst the exoteric akousmatics had to be content with their akousmata. Thus there was an inner circle of initiates who were allowed inside the veil to see and hear Pythagoras. Pythagoras apparently concealed himself behind a curtain when he gave his lectures to the akousmatics and neophytes, only the members of the inner circle being able to both see him and hear his words. When the neophytes passed all the tests imposed on them, they were admitted behind the veil to the esoteric circle. Iamblichus describes these tests and the process of initiation as follows:

> When he was equipped in this way to educate his disciples, he did not immediately grant admission to the society to the young men who approached him with this wish, until he had tested them and made up his mind about them. He first asked them about the manner in which they associated with their parents and relations; then he watched whether they laughed at the wrong time or were too quiet or garrulous. Furthermore he inquired about their wishes, what friends they had and what they did together; what their chief pursuit during the day was and what gave them joy and what sorrow. In addition he observed their appearance and carriage and all the motion of their body. He judged their character by natural signs, interpreting their invisible psychic characteristics by their external qualities. Whomsoever he tested in this way he wanted to observe for three years, testing out his stability and love of learning. He also wanted to see if, in his opinion, the neophyte was sufficiently prepared to scorn worldly success. Then he imposed on the neophytes a silence of five years to see how their self-control was, deeming the holding of one's tongue to be more difficult than other forms of self-control. This is in conformity with what the founders of the religious mysteries reveal to us. During this time each neophyte's belongings were given to the followers of Pythagoras assigned this duty. These were

> known as 'politikoi', who were also stewards and lawmakers. If the initiates were deemed worthy to share in his ideas, being judged by their way of life and other good qualities, they were at last admitted to the inner circle after the five years of silence, and within the veil they both heard Pythagoras and saw him.[9]

This passage corroborates the structure of the society outlined previously; there being esoteric and exoteric Pythagoreans, the 'mathematikoi' and the akousmatics. The 'politikoi' here appear as supervisors of the belongings of the initiates which were held in common if they were admitted to the inner circle and, if they failed to pass the tests, were given back to them twofold. The 'politikoi', at this stage at least, were not involved in external political affairs. The initiates were judged on their character only and did not have to be of noble birth as many writers on the Pythagorean society insist. It was not an aristocratic or oligarchic organization and did not favour an aristocratic form of government. Thus Delatte is wrong, having misinterpreted the words of Iamblichus, when he states that the Pythagorean society at Croton was aristocratic, formed to withstand the assaults of democracy.[10] The tests of character were largely employed to make the neophytes conform to Pythagoras' own character. Thus he was notoriously secretive and silent, not laughing or crying and always practising a strict self-control; thus nobody ever saw him having sex or performing the natural functions. He obviously wanted to appear to be superhuman. The silence of five years (we do not know whether it was total silence or whether there were relaxations of the rule; one may suspect the latter) was especially important because it inured the initiates to a practice which kept the master's doctrines secret from the profane. The philosophy of Pythagoras resembled the mystery religions, as Iamblichus remarks in the above passage, in its insistence on the members not divulging the mysteries taught by Pythagoras. In this sense it is the antithesis of a political organization whose whole reason for existence lies in propaganda and spreading the good word. In this silence the society of Pythagoras is totally unlike public religions which openly preach their doctrines. The silence also indicates that many of the doctrines were very revolutionary

and would not have been understood by most. Preaching them to all and sundry would have led to political and social trouble, and these Pythagoras wanted at all cost to avoid. As it was, the Pythagoreans did fall victims to a rioting mob who were incensed at their secrecy and strange doctrines which must have leaked out in debased form by hearsay.

Once the initiate was within the veil he had to observe the laws of the society. Foremost among these was the dogma of communism, the members of the inner circle having no private property. Pythagoras considered possessions detrimental to 'theoria' or the contemplation of the divine truths. A typical day in the life of the Pythagoreans will be examined shortly, but much of their time was devoted to study and theoretical concerns. The basis of Pythagoras' philosophy was mathematics, not necessarily the solving of problems, most certainly not applied mathematics, but mathematical theories and their application to conduct and the interpretation of reality. As Iamblichus states,[11] Pythagoras and his followers were only concerned with elementary mathematical problems, devoting most of their research to theory and investigating the principles which were the basis of mathematics. Thus they examined the properties of numbers and interpreted them symbolically and analogically. Four became a symbol of justice, six of marriage and the One the supreme reality. These complex theories will be discussed later. Having no worries about possessions all their time could be devoted to these pursuits. The inner circle of the Pythagoreans is very much like the caste of the guardians in Plato's *Republic* with the marked difference that the Pythagoreans never had to take part in politics. The guardians in Plato descend from their ivory tower in order to apply their theories to social and political life. This the early Pythagoreans did not do. However, the Pythagoreans were not like mediaeval monks. They had wives and there were many female members. They did not devote their lives to prayer, but investigated reality philosophically. The later Jewish sects such as the Essenes imitated the way of life of the Pythagoreans, but were too ascetic to qualify as a suitable analogy. The best example of a later communist Pythagorean organization is to be found at Rome in the third century A.D., the circle of followers who gathered around Plotinus. This was a Pythagorean community which

lived in the midst of the capital in strange conditions. Thus Plotinus lived in other people's houses, ate their food (fortunately he was a vegetarian and consumed little) and looked after their children. He had many women followers, and many parents who were going to die entrusted their children to him whom they regarded as a divine guardian (cf. Pythagoras as a good daimon from the heavens). Plotinus looked after their worldly goods in the meantime before they had been admitted to his inner circle and began to philosophize. This rather precarious existence of living off the charity of others (Plotinus persuaded leading senators to give away their money and beg from their relatives and friends) must have finally palled because Plotinus wanted to restore an ancient Pythagorean city in the countryside near Rome and live in communist and philosophical bliss with his followers. It was not to be, for the Roman Senate vetoed the idea. The Pythagoreans in Croton must have led a similar existence, although they appear to have been closer to nature, their buildings probably lying on the outskirts of the city. The later Pythagorean akousmatics were just beggars with inner enlightenment, and Pythagoras and his followers must have relied on the charity of the people of Croton to a great extent. He may, however, have gained some wealthy members who placed their goods at the disposal of the master and the other members. Plotinus at Rome employed a similar technique. This communist society had many good aspects considering the milieu in which it found itself. Thus Pythagoras freed his slaves, and the members of the society do not appear to have had slaves waiting upon them. The situation at Rome in regard to slaves was ambiguous, both Plotinus and Porphyry paying lip service to Pythagorean ideals of dispensing with slaves, but in reality Plotinus had slaves and on occasions whipped them. Porphyry appears to have been better in this respect and denied himself the luxury of slaves and servants in the name of self-sufficiency. The simple way of life of the Pythagoreans at Croton contributed to their not needing slaves. Pythagoras had very strict rules concerning diet and clothing. He frowned on luxury especially and would not let his followers wear anything but simple white linen clothing. There is an interesting passage in Iamblichus describing the dietary regulations of the two classes of Pythagoreans.[12] This is

probably derived from the writings of Aristotle and Timaeus for Aristoxenus denied that Pythagoras had many special rules governing diet. In general Pythagoras forbade the eating of food which caused flatulence or indigestion. Plants and animals sacred to the gods or involved in their worship were also banned as was anything which defiled the purity of the psyche and prevented it from foretelling the future. This last probably refers to prophetic dreams which were disturbed by certain foods; hence Pythagoras banished food from the table which caused bad dreams and nocturnal phantasms. The most theoretical of the Pythagoreans, and that probably included the 'sebastikoi' and the other 'mathematikoi', did not eat animal food. They were strict vegetarians, but even here their diet was further confined because Pythagoras forbade the eating of beans, mallow and other plants. These philosophical Pythagoreans were encouraged not to hurt animals or sacrifice them to the gods. Animals were men's brothers, having the same elements and the same constitution. The master himself set a good example to his followers for he did not employ blood sacrifice nor did he eat animal flesh and preferred to admonish and teach dumb animals good behaviour; hence he taught the Daunian bear not to eat meat. The other Pythagoreans, the so-called akousmatics, were allowed to eat some animal flesh, chiefly that of sacrificial victims which had been hallowed by being offered to the gods. Thus the akousmatics were allowed to sacrifice some animals. The life of the akousmatics was not as sacred and philosophical as that of the 'mathematikoi', hence they could drink wine and eat certain animals. Occasionally Pythagoras prescribed periods of total abstinence from animal foods for the akousmatics as well, but in general their life was less severe than that of the 'mathematikoi'. The akousmatics were never allowed to eat the brain and heart of animals because Pythagoras believed these to be the seats of life and intelligence. He also forbade the eating of mallow because this was a messenger (angelos) from the gods and a prophetic plant which mediated between the stars and earth. This is another example of Pythagoras' cosmic magic and plant mysticism which he learnt from the Magoi and the Egyptians. The Pythagoreans were not fond of fish either; they were considered a low form of life and Pythagoras banned many varieties. Of course, the

'mathematikoi' ate neither fish nor fowl because these were living creatures.

The Pythagorean society also had a famous oath which is symbolic of many of the master's teachings. The central doctrine of their philosophy was that everything is number or resembles it so that the oath embodied this belief:

> Hence they were always proclaiming the maxim:
> 'everything resembles number',
> not only swearing by number, but also by the man who elucidated its nature, Pythagoras. Because of the power residing in arithmetic they swore by Pythagoras as though by a god, saying:
> 'No, by the man who transmitted to our minds the tetraktys, the source possessing the roots of ever-flowing nature.'
> Amongst them the 'fourth number' consisting of the first four integers was called the 'tetraktys'. One, and two and three and four make ten, the most perfect number, since upon reaching it we resolve everything again to the monad and begin to count again.[13]

The quaternion or four was a Pythagorean symbol for many occurrences in nature. Thus there were four elements (originally a doctrine of Empedokles, but he may have learnt it from the Pythagoreans), four seasons and four ages of man. The roots of nature were the elements which, composing nature, were in ceaseless flux. Only numbers were changeless and eternally recurrent.

What the Pythagoreans did during a typical day has been well described by Iamblichus. The following passage appears to be describing a later stage of the society, but it contains many features that must have been present in the society at Croton. Furthermore, it does not describe the way of life of the philosophers, at least not those in the original society at Croton, for they did not eat meat or drink wine. There are many other facets to this description which demonstrate that it is the way of life of the akousmatics which is being portrayed. However, we may have before us a description of how Aristoxenus conceived the life of the philosophers in the society. The later stage of the society being described together with the eating of meat

(Aristoxenus denied that Pythagoras and his followers were vegetarians) indicate that Aristoxenus may be the author of this passage. All in all, however, it is safer to assume that it is the modus vivendi of the akousmatics being narrated:

> Now I shall describe the daily pursuits which he prescribed for his disciples. Guided by Pythagoras they acted thus according to his instructions. At dawn these men took solitary walks in places which were appropriately silent and tranquil, chiefly the precincts of temples and sacred groves and other pleasant spots of greenery. They did this because they thought that they should not meet anybody before putting their psyches in order and tuning their minds. The tranquillity of dawn and lonely places was in harmony with a good state of mind. Thus to be jostled amongst crowds immediately upon waking they considered to be psychically disturbing. Therefore the Pythagoreans always chose for themselves the most sacred places. After their morning walk they gathered together, especially in temples, and if not there, then in similar places. They employed this occasion for learning and teaching and for the correction of moral qualities. After they had passed the time in this sort of way they turned to the care of their bodies. Most of them anointed themselves and ran, a few engaged in wrestling in the gardens and the groves. Some practised leaping with weights in their hands and shadow-boxing; in their pursuits they chose the exercises which were made for strengthening their bodies. They had bread and honey or honey-comb for breakfast, but did not drink wine during the day. After breakfast they devoted their time to political and economic affairs, both those concerned with the rest of the city and foreign ones as well, owing to the injunction of the society's laws. They wanted to administer everything in the hours after breakfast. At dusk they began walking again, not alone as in the dawn promenades, but strolling two by two or in threes, memorizing their lessons and practising the pursuits of excellence. After the walk they bathed, and when they had laved themselves they met in the mess-rooms [syssitia] which did not regale more than ten people. When the sharers of the common meal had been

convoked, libations and sacrifices of animals and incense were performed. Then they went to dinner so as to finish it before sunset. They had wine, barley-cake, bread, roast and boiled and raw vegetables. The flesh of sacrificial animals was served up, very rarely did they eat fish. Some sea-foods are not suitable for their table for a number of reasons. After dinner libations were held, then there was a reading. The custom was for the youngest member to read, the oldest deciding what should be read and in what manner. When they were about to depart, the cupbearer fills their goblets for libations and when they were pouring them the eldest member recited the following: 'Do not harm or destroy a cultivated plant or fruit-trees nor an animal which is not harmful to humanity. In addition have a respectful and noble attitude to the gods, daimons and heroes, as well as to parents and benefactors. Aid law, fight lawlessness.' When this had been said each member went home. They wore white and pure clothing as well as having white clean bed-linen and blankets. Their bedclothes were linen cloaks because they were not allowed to use woolskins.[14]

This cannot be a description of the philosophers in the Pythagorean society because they did not eat meat, neither did they drink wine nor did they have to memorize lessons. They lived together and, unlike the akousmatics who came together during the day and went home at night, pursued a life of contemplation uninterrupted by political and economic concerns. It is safe to assume that the author of this description of the akousmatics is Aristoxenus who described the Pythagorean society as it was in the fourth century B.C., not the society at Croton of the sixth century B.C., although the above passage appears to pretend to portray that society by its mention of a city's political affairs being administered by the Pythagoreans. By the time Aristoxenus was writing the society had become involved in politics and had degenerated into a formalism which is described in this passage. During the lifetime of Pythagoras the philosophical members of the society would have lived a more inspiring existence than this. They would probably have taken solitary walks to meditate on their actions performed

during the previous day and the theories of the master. The philosophers of the Crotoniate society would also have frequented lonely spots sacred to the gods. The may even have met afterwards to discuss the teachings of Pythagoras and had bread and honey for breakfast because Pythagoras was fond of honey. Physical exercise too would have been part of their daily routine. They would also have eaten in mess-halls, an idea which Pythagoras had borrowed from the Spartans and Cretans. Instead of sacrificing animals they would have been content with incense of which Pythagoras was particularly fond, and, according to Porphyry,[15] used it as a means of divination. Their meal was strictly vegetarian, not even sacrificial meat being allowed. After the meal they would have remained together in their lodgings where all goods were in common. Thus this description of the Pythagoreans quoted by Iamblichus fits the life of the akousmatics perfectly, and if one corrects many details also delineates that of the philosophical 'mathematikoi'.

Finally the political question must be broached to discover whether either Pythagoras or the society which he founded became involved in politics. It cannot be denied that many of Pythagoras' deeds and speeches had political repercussions, but this was not his prime motive. Thus his speeches to the people of Croton had the effect of causing a political revival in the fortunes of the city. Likewise his espousal of the cause of the Sybarite refugees may have precipitated the war between Croton and Sybaris which will be described in a later chapter. It has been suggested[16] that the coins of Croton issued after the destruction of Sybaris show that the Pythagorean society influenced events. Of course, these facts do not prove that the society was a political one, but only demonstrate that the society's prestige influenced the conduct of politicians. We have already seen that Iamblichus describes Pythagoras escaping from political involvement on Samos by coming to Italy. He did not want to waste his time on embassies and other political concerns, but preferred to avoid the duties of citizenship by going into voluntary exile in Italy. In Croton he was not a citizen so that he did not have to take part in politics. The avoidance of politics then was the reason for his coming to Italy, so that it is absurd to suggest that once there he enthusiastically engaged in

political intrigue. Nowhere in the biographies are any political reforms attributed to Pythagoras, although Diogenes Laertius[17] credits him with a book on politics; but this was probably concerned with the laws of the society. The society's internal political innovations were often termed the best form of government by Iamblichus, but here he is being influenced by Plato's language in the *Republic* whereby Plato describes his own communist society as the best political organization possible. The laws and structure of the Pythagorean society were never applied to the government of a city-state in Italy or elsewhere for Pythagoras probably knew its limited applications. Hence only a small number of the society's members actually practised communism. This Pythagorean elite influenced events by their example, but did not form a pressure group within the body politic. It is against all the principles of Pythagoras to assert that the society formed an aristocratic clique which dictated to the city. He himself had fled such a tyranny on Samos. Such an oligarchy in Croton would have been condemned by Pythagoras who did not like beans because, amongst other things, they were used to count votes in oligarchic governments.

Thus Pythagoras was not a supporter of aristocracy or oligarchy. In all passages of ancient authors in which Aristoxenus is quoted Pythagoras and his followers were described as being lovers of freedom.[18] He filled the Italian cities with a spirit of freedom and saved them from the oppression of tyrants. He also persuaded the tyrant Simichus to abdicate his tyrannical throne and was most critical of the totalitarian Phalaris. His advice to Leon of Phlius on the superiority of contemplation to riches and honour again shows that he was a believer in the freedom of thought and against tyranny, for Hellenic tyrants of the period were notoriously luxurious and vain. His emphasis on simplicity and disdain for worldly honours and riches were not the characteristics of a man who favoured aristocracy. The contention that Pythagoras was a supporter of aristocracy is the result of believing certain Pythagorean writings, most of which are late forgeries, which were influenced by the inhuman and totalitarian spirit of Plato. The authors of these Pythagorean forgeries lived in a post-Platonic age and thought that Plato's political ideas were a faithful mirror of the beliefs of Pythagoras and the original

society at Croton. They were deceived into thinking this by Plato's own clever borrowings of Pythagorean psychological and mathematical and cosmological theories. Plato perverted the doctrines of Pythagoras for his own political ends. Hence Plato employs the model of the tripartite psyche as a symbol of the three castes within his society described in the *Republic*. The idea that there are three parts in the psyche which form a harmony or virtue is a Pythagorean idea which Plato employed to justify totalitarianism. Likewise he borrowed the Pythagorean doctrines of recollection and reincarnation as well as the theory of ideas to develop a defence of totalitarian political practices. The guardians in the *Republic* are a travesty of the theoretical Pythagoreans. There are many other odious developments in Plato's thought which cannot be discussed here, but which influenced the writers of the spurious Pythagorean texts on politics. It is to the credit of the Pythagoreans of the later Roman Empire that they intentionally avoided the political philosophy of Plato and concentrated on his myths and Pythagorean metaphysical ideas.

The society at Croton, although not governed democratically, was, nonetheless, an inspiration to the free elements in the Italian cities. It was the prerogative of Pythagoras the sage to have absolute authority in the society because his followers did not have his depth of experience or knowledge. This was, after all, a voluntary process for the members agreed to join the society and accept its rules. One could hardly term Pythagoras a tyrant for he exercised no political control over his followers. Thus if a member broke the rules of the society by divulging any of its secrets he was figuratively declared to be dead and a cenotaph erected for him after he had been expelled; it is to these secret doctrines which we now must turn in order to examine what we know about the mathematical philosophy of Pythagoras. This is a difficult task owing to the strict vow of secrecy he imposed upon his followers, but from later accounts of the mathematical philosophy one can infer many of the ideas of Pythagoras himself which he taught to his disciples at Croton.

SEVEN

MYSTICAL NUMBERS

The purpose of this chapter is not to examine the original discoveries of Pythagoras in the field of mathematics, but to investigate the symbolism which he applied to numbers, chiefly those composing the decad or ten. Therefore only a brief summary of his originality in the mathematical field will be attempted here, for a thorough analysis can easily be obtained from any history of Greek mathematics and would be out of place in a non-technical biography of Pythagoras. Then one must describe the manner in which the cosmos resembles number, and how numbers can be symbolically interpreted as creating the universe. The bulk of the chapter will therefore be devoted to the question of the decad and the symbolism of the various numbers contained therein. Thus the number four has definite properties which distinguish it from other numbers and has a symbolism of its own which assumed a great importance within the Pythagorean society. The symbolism is confined mainly to the decad because of the peculiar perfection of that number. Most of humanity counted by tens, not for any fortuitous reason or because men first counted on their fingers which happen to be ten in number, but because the physical laws of numbers demand it. The Pythagoreans were obsessed with limit and finiteness so that they always concluded that the numbers closest to unity and finiteness were the most perfect; hence numbers beyond the range of ten being further removed from the limit of all things, the One, were less important than the number contained within the decad. Being nearest the source of number, the One, the numbers of the decad have peculiar properties which contributed to their being regarded as gods. Thus the Pythagoreans were unrepentant polytheists who worshipped the numbers of the decad as gods.

Pythagoras' contribution to mathematical science has been

well summarized by Iamblichus[1] so that what follows is basically an epitome of that author. Pythagoras learnt a lot of mathematics from the Hellenic philosophers such as Thales, as well as from the Egyptians and Babylonians or Chaldeans. He also made many original contributions himself and employed an idiosyncratic style of mathematics. He was the first to introduce philosophical ideas into mathematics and gave an orderliness to the science which it had not previously possessed. He had a correct approach to problems and invented mathematical agreement and symmetry. He also introduced a symbolical and allegorical use of mathematics; thus he employed numbers to signify certain gods and abstract ideas. Not having himself the verbal means of enunciating the idea of immaterial existence he employed the paradigm of numbers to convey this notion of substances independent of bodies. He assigned the correct names to the various branches of mathematics and employed pure demonstrations. Thus his style of mathematics led to the discovery of ultimate reality which became for later Pythagorean and Platonic philosophy the forms or ideas which were immaterial substances also referred to as ideal numbers. The material cosmos owed its existence to its sharing or imitating these immaterial essences. His mathematical method contributed to the purification of the pysche because it showed that the basis of reality was number, something which was prior to all three-dimensional bodies. The psyche purified itself by contemplating mathematical truths and, leaving behind the senses and the physical world, proceeded into the dimension of pure thought to contact the gods. The gods were compared to numbers because they are pure and free from material change; they possess an existence which is independent of three-dimensional bodies which are mortal and perishable. When the mind meditates on numbers it is communing with the gods who desire nothing from mortals but their rapt admiration and contemplation. Thus contemplation is a form of prayer which does not ask any favours from the gods, but simply adores their beauty and perfection. In order to be able to meditate on the gods the mind and psyche must become like the divine, hence the famous doctrine of Pythagoras: resemblance to a god. Only like can know like, only a purified mind like unto the gods can know them.

Pythagoras' symbolism of arithmetical numbers was also em-

ployed to explain the origin of the cosmos. This symbolism may at first seem absurd to the modern mind, but it must be remembered that a genius like Plato could take it seriously, even though many other Hellenic thinkers ridiculed and parodied it. The Pythagoreans believed that numbers had a separate life and existence of their own which were independent of men's minds. The idea of the separate existence of numbers which the human mind only perceives but does not create, numbers not being logical constructions of human consciousness, is upheld by some modern mathematicians including Frege, but the majority of modern thinkers believe mathematics to be only another form of human logic which is not necessarily valid in all parts of the universe. The ancient Pythagoreans also ascribed life and a telepathic form of consciousness to these numbers. The psyche freed from the trammels of the three-dimensional world telepathizes with these beings whose consciousness is presented immediately to the view of a purified mind. Thus it can come to know their properties and the individual characteristics of their beings. Some of the later Pythagoreans such as Numenius and Plotinus attempted to reconstruct on a three-dimensional level the language of the gods. Thus the Greek word 'on' is a fairly faithful representation of the divine utterance for existence. The Greek syllable expressing the One is 'hen' which the divine numbers use to refer to the ineffable One. Here one must recall the Pythagorean akousma: 'What is the most wise? Number or that which gives names to things'. The Greeks and the Hellenized barbarians of the Roman Empire believed that their own language was most faithful to the utterances of the gods because they were the first humans to become aware of the existence of the mathematical deities. The tongues of these late Pythagoreans struggled to pronounce this divine language and produced a series of terms which closely resembled the speech of the gods. Such words include 'hestia' meaning hearth, a Pythagorean designation of the central fire which was symbolically identified with the source of existence or 'ousia' which was the nomothete or metaphysical giver of names mentioned by Plato in the *Cratylus*. Fantastic as these speculations seem they gave rise to a method of 'theoria' or contemplation which taught men how to think, another reason for supposing that the gods have a language similar to that of the ancient Greeks.

The physical cosmos and hence all three-dimensional bodies came into existence from these numbers. The One is the creator which produced the primal motion or dyad, the two, which in turn produced the first number, three, which is a symbol of the cosmos. Three also symbolizes the three dimensions which are as few in number as the first real number or three, the One and dyad being creators of number, not numbers themselves. Pythagorean mathematicians did not speculate about any more dimensions because they considered numbers divine and mathematics a study of the gods so that any theories about further dimensions would have been impious and a study of evil within the cosmos since the infinite was identified with evil. Similarly they did not speculate about negative quantities because negation was also evil. They certainly knew about the idea of zero which Iamblichus and Plotinus (III 8, 10, 28, H.S. vol. I, 1964: the editors (p. 375) of Plotinus alleging that the zero refers to the 'nothingness' of the later Christian mystics!) call 'meden', but absolute nothingness was not considered to be an attribute of the gods. The One is also symbolic of the geometrical point so that when two such points are joined the resulting line was symbolized by the dyad. When the lines formed a plane as in a triangle the three was in action. The four or tetraktys symbolized solid bodies or those composed of planes. Thus numbers could produce points in space, then lines, planes and finally bodies which are three-dimensional. The angles in certain plane figures such as triangles and dodecahedrons were also associated with certain gods. Astrology is involved here to a certain extent. This is an odd theory for how could abstract geometrical solids produce physical bodies? According to some writers Pythagoras was supposed to believe that physical objects were composed of geometrical points which possessed magnitude, i.e. these points were like tiny billiard balls which, when conglomerated into masses, produced solid objects.

There is something wrong with this theory, and there are many reasons for supposing that Pythagoras did not accept it. If the geometrical points are uniform units one encounters difficulties in accounting for irrational numbers which do not admit of being described in terms of a certain number of units. Thus the diagonal of a square is irrational. The difficulties the Pythagoreans supposedly met with the theory that the universe consisted of geo-

metrical points with magnitude have been well summarized as follows:

> Then, with the progress of their own mathematical science, the foundation of their universe was suddenly swept away. It was discovered that the diagonal and the side of a square are incommensurable. $\sqrt{2}$ is an 'irrational' number. The term originated with them and indicates their shock when they, who held that number and reason were the same thing, found that they could not express $\sqrt{2}$ by any number. Their confusion was great. If the diagonal and the side of a square are incommensurable, it follows that lines are infinitely divisible. If lines are infinitely divisible, the little points of which the Pythagoreans built their universe do not exist. Or, if they do exist, they have got to be described in other than purely mathematical terms.[2]

It is difficult to believe that Pythagoras, who knew about such things as perfect numbers, did not know about the irrational quality of two. The dyad was a symbol of infinity, hence Pythagoras must have known about its irrational properties. Therefore the theory of material units or numbers which composed the cosmos must not have been held by the Pythagoreans. Aristotle said that the Pythagorean points had no weight or any physical qualities whatsoever. The physical world for Pythagoras must have had a phantom existence; it was not real because it was eternally changing. This belief in the eternal change within nature is expressed in the oath of the Pythagorean society. The cosmos somehow imitates the numbers, but falls short of the archetype.

The other number-symbolism of Pythagoras is less complicated than these cosmic speculations. Pythagoras recognized certain properties in all the numbers of the decad which distinguished each from the rest. This analysis of number by Pythagoras is a forerunner of the Platonic dialectic which became a mystical vehicle by which man attained to the divine. Pythagoras was the first to define such things as perfect numbers, the first such number being six, the sum of whose factors adds up to six. But before we analyse the properties of numbers, the One and the dyad, the creators of number, should be investigated. One in Pythagorean arithmetic was not regarded as a number at

all. According to Pythagoras the One acted on the dyad to produce the numerical series. This action of the One on the dyad was conceived as a relationship like that of form to matter. The One was the formal or male principle, whilst the dyad was female and material. Later Pythagoreans expressed this relationship as that of a seal being impressed upon a mould. The One was the source of limit and form, form or eidos in the eyes of the Greeks being regarded as a cosmic principle because without shape and form the cosmos would be an asymmetrical chaos of matter or infinity. For Pythagoras the One was identified with Apollo; sometimes it was equated with Zeus, the father of the gods, as creator of the cosmos. The One is the supreme entity for Pythagoras, being the source of all the numbers. In itself the One also has hermaphroditical features for it was called 'male-female' or 'arsenothelys'. The Pythagoreans had many other names for it. It was also known as the cause of truth, being, the friend and the ship. The One was called 'ship' because they conceived of the cosmos as a ship whose keel was the central fire around which the planets revolved. The One was also designated by the name of 'hysplex' or starting machine, an instrument used by the Greeks to start their chariot races. This term was applied to the One because the Pythagoreans believed it set the cosmic processes in motion. The race-course of the Greeks is an apt symbol for the cosmos because like the cosmos the course is not continuous and linear, but circular and cyclical. The events in the cosmos repeat themselves because the stars and planets revolve in circles; the cosmic periods correspond to the laps of the course, and the turning post (kampter) would be like the end of the cosmic period. The cycle of reincarnations is also similar to the laps of a race-course.

The Greek name for the One or monad is 'monas' which the Pythagoreans believed was derived from the word for 'to remain' or 'menein'. The One became a symbol of the source of permanence within the cosmos. This was identified with the central fire or hearth of the universe about which the ten planets revolved. Many of the names of the One reveal that it was identified with the source of fire, the sun or central fire. For the early Pythagoreans the sun was not the centre of the cosmos nor was it productive of its own heat and fire; instead it was a sort of glass reflector which caught the light and heat of the central fire. The names 'Apollo' and 'Hyperion' for the One indicate its identity

with the sun-god as the source of life within the cosmos. But these names may not refer to the sun at all, but to the central fire which was also equated with the One. There is always the possibility that the central fire is just a symbol for the sun which displaced the earth as the centre of the cosmos. The sun and the One became associated with the mind or nous which pervaded the universe. Since the order in the universe proclaimed its divine origin, the mind who planned it must be the most intelligent of all; thus it was identified with the One.

From the One comes all that is good in the universe for it is the source of the odd numbers, such numbers being termed good because in the system of Pythagorean arithmetic the sides around numbers or gnomons always form squares around odd numbers. The square is a symbol of equality and regularity. In this the square resembles the One, whilst the dyad or two is the source of unevenness and inequality in the cosmos. Thus the dyad is the evil principle. This is also the reason for the One being termed the 'friend' because Pythagoras conceived of friendship as a form of equality. In one of his akousmata Pythagoras defined the friend as an alter ego.

So too Empedokles termed the state of the cosmos when everything formed a perfect unity 'philia' or friendship. The One as the source of friendship and limit is the agent which balances all the elements in the cosmos and makes them friendly to each other so that the universe forms a unity. The symbolism which Pythagoras applied to the One proves that his views on the gods were revolutionary for Apollo or Zeus as king of the gods became identified with the One. His pantheon is polytheistic with a supreme head symbolized by the One. This application of metaphysical and cosmic, as well as ethical ideas to numbers and the One and dyad, was one of the original inventions of Pythagoras according to Iamblichus. This revolution of the identity of gods and numbers had been anticipated to some extent at Babylon, but the Babylonians lacked the theoretical insight to give a coherent explanation of this identity. In the later Pythagorean and Platonic philosophers the One became a puissant metaphysical symbol so that complex systems of metaphysics were constructed around it.

The One is the supreme agent in the cosmos of the Pythagoreans, but in order to explain how the cosmos and the other

numbers came into existence they needed an opposite for the One. For the Pythagoreans the cosmos was a unity of opposites, a harmony of finite and infinite elements. The One is the source of the finite, whilst the dyad is the creator of the infinite. Pythagoras regarded the One as 'god' or the 'good'; on the other hand, he thought that the two or dyad, which he called 'kakos daimon' or evil spirit, was evil. This is an obvious case of dualism which Pythagoras had learnt in Babylon from Zaratas. The cosmos was regarded as a tension of good and evil forces engaged in an eternal struggle. It is certain that Pythagoras believed in this sort of dualism, but he probably expressed the conflict in the cosmos in terms of a combat between the infinite and finite. Aristotle reported that Plato, not Pythagoras, was the first to oppose the dyad or two to the One, but this cannot be right for many reasons. Pythagoras knew that the two gave rise to all the even numbers which he regarded as evil because the sides of their gnomons were rectangular, not square. The dyad was also apt for being designated as the evil demon because of its proximity to the One whose opposite it in every way was. Thus Aristotle is exaggerating the originality of Plato and underestimating that of Pythagoras. Plato may have been the first to call the dyad 'indefinite' because of its need to be defined and limited by the One, but Pythagoras certainly regarded the dyad as the cosmic opposite of the One. The dyad is another of Plato's borrowings from the Pythagoreans.

The dyad is also a symbol of whatever is defective or excessive in the cosmos. The cosmos is a harmony of opposites which cannot be solely explained by the existence of the good or the One. The cosmos has an evil element which resists the activity of the good; this evil being termed matter or the female element. The dyad of Plato stands for this evil in the cosmos and to a certain extent replaced Pythagoras' idea of the infinite. Plato, being an inferior thinker to Pythagoras, was afraid of the infinite so that he insisted that there was only one universe, spherical in shape and having nothing outside it. On the other hand, Pythagoras demanded the existence of the infinite, believing that the universe was not limited in the sense of Plato for beyond the solar systems stretches the infinite which the cosmos or cosmic animal breathes in to give it life and sustenance. Plato rejected the infinite because it had provided the atomists and other materia-

lists with many good arguments so that the common man was afraid of the infinite. This fear of the infinite was one of the reasons for the success of Christianity and its childish cosmology. Pythagoras and some later Pythagoreans like Heraclides Ponticus showed more sense for they admitted the existence of an infinite number of solar systems lying within the ether which was infinite. They were not afraid to argue for immaterial realities in the face of the existence of the infinite. The infinite of Pythagoras or Anaxagoras could spawn an infinite number of kosmoi or solar systems.

The cosmic dualism of Pythagoras has already been explained to some extent by referring to the dualism of the Magoi and their theory of cosmic opposites. Aristotle reports the Pythagoreans as having drawn up a list of such opposites. The opposites of the Pythagoreans began with the conflict between the principle of limit and that of the unlimited or infinite. The limit was the One, the infinite was particularized in the dyad or two. Table 1 shows the list of opposites.

Table 1
The Pythagorean list of opposites

limit	unlimited
odd	even
one	plurality
right	left
male	female
at rest	in motion
straight	crooked
light	darkness
good	evil
square	oblong

It is interesting to observe that there are ten such opposites, ten being the most perfect number; this number represented the limit of the cosmos. Ten is the limit of the important numbers so that it is fitting that there should be ten opposites in the cosmic harmony; and this is exactly what the opposites represent: they are a paradigm of the cosmic music . The Pythagoreans con-

sidered music to be a numerical science, the relations between numbers being the harmonies of music. How Pythagoras discovered these musical harmonies or consonances will be discussed presently. Numerical relations are simply ratios which the Pythagoreans contended, do not hold just between numbers, but also between material things like water and fire. Thus Plato believed, in accordance with the Pythagoreans, that the four elements were arranged in a system of ratios. The dyad is related to the table of opposites in its being associated with darkness, evil, the female principle and the oblong or rectangular. The two is the source of all the even numbers whose sides are rectangular. Pythagoras in one of his speeches (already quoted) stated that the left is a symbol of the even numbers and hence is also connected with the dyad. In the religion of the Magoi there is a similar dualism of good and evil, light and darkness, personified in the two gods, Ahriman, the god of evil, and Ahuramazda, the god of light and goodness.

The dyad was called 'Rhea', mother of the gods, because the name of this goddess is similar to the Greek verb 'rhein' meaning to 'flow'. Since matter was always in a state of flux, Rhea and the dyad became synonymous with it. In later Pythagoreanism the dyad was also called 'Isis' for the name of this goddess is like the Greek word for 'equal' or 'isos'; this etymology referring to the equality of the single units in the two. By another pun the dyad became known as 'dye' or misery, alluding to the evil which the dyad causes in the cosmos. The Pythagoreans were very interested in the origins of words and their meanings for they were searching for the language of the gods which held the key to ultimate reality. Thus all these false etymologies of the word 'dyas' or dyad aim at discovering the divine name for the two so that the Pythagoreans could gain mastery over the source of misery and evil in the cosmos. There were correct names for all things in the universe which the original divine giver of names (the 'nomothetes' of Plato's *Cratylus*) had instituted, but owing to the corruption of later generations the names which revealed the essence of things were lost so that the task of the sage is to discover the essential names of all objects. Lastly, the dyad was known as 'tolma' meaning 'daring' in its role as breaking away from the pristine unity of the One to form evil and misery. This original act of separating itself from the One was an act of fool-

hardiness; thus the rashness of the dyad created the material world of three dimensions together with all the woe entailed in living in such a place. The task of the Pythagorean is to restore himself to the primordial unity of the One by abolishing within himself all material and evil elements: becoming like a god meant simply the unification of the psyche to escape from the daring deed of the dyad. We have lost sight of the supernal unity, said the Pythagoreans, by proceeding into the three dimensions in imitation of the original 'tolma' of the dyad; forgetting the One, we now dwell in a material world of suffering.

This world of matter is symbolized by the three which represents the three dimensions and is a further stage in the original 'tolma' of the dyad. Since the three is the first number it was associated with plurality and multitude; like the material cosmos it has a beginning, middle and end and as such was often likened to the cosmic psyche which pervaded the universe to animate it. The psyche is often compared to a triangle, principally the 'zoogonic triangle' which gave life to the cosmos and was the basis of the cosmic atoms of fire, air and water. Since a triangle has three sides it was a symbol of the three or triad also. Pythagoras associated it with the tripod of Apollo and the fact that the Greeks offered always three libations to the gods. The Pythagoreans were well aware of the magical and mystical properties of the three which was often used in incantations and other magical formulae. Thus when the Greeks congratulated somebody for their happiness they termed him 'thrice-happy'; and, of course, the mystical Hermes is 'thrice great'. The triangle being the first plane figure in geometry the Pythagoreans linked the three with the plane. In the process of forming the three-dimensional world of solid objects the three creates the plane, then the four completes the geometrical solid by adding the third dimension.

The tetraktys or number four is second only to the One in importance in Pythagoreanism. It possesses more symbolic values than any of the other numbers which compose the sacred decad. It was a symbol of the demiurge or the cosmic creator and his numerical model for the universe, and completed the process of fluxion whereby physical objects are produced from points, lines, surfaces, and solids. It was also by the sacred four that the Pythagoreans swore the oath of their society: 'I swear by him who has transmitted to our minds the sacred four, the roots and

source of ever-flowing nature.' The reasons for this perfection can be seen in the way in which the Pythagoreans believed it was the ten or decad in disguise. The sum of the numerical series leading to four (or 1+2+3+4 = 10) equals ten. Thus the tetraktys or four is in reality the decad for the sum of the units in the first four integers was equal to ten. These units were usually arranged to form a triangle with the One at the top. The four was regarded as one of the keys of nature because many natural phenomena came in groups of four as will be demonstrated presently.

The symbolic meaning of four began with Pythagoras and probably referred to the four elements which Empedokles said composed the cosmos. Empedokles may have borrowed the idea when he was a pupil of Pythagoras. Empedokles called the elements of fire, air, water, and earth the roots. The four is also called the roots ('rhizomata') of all existence. This originally Pythagorean idea of the four as the roots of nature may have influenced Empedokles. In nature there were a great many groups of four which the four was believed to symbolize. In fact the Pythagoreans believed that the four embraced the whole of nature and was the cosmic cause. Plato agrees with them in his insistence on the model of the cosmos being composed of four numbers, the origin of the four types of living creature within the cosmos and also of the three dimensions. Much of our information about the four comes from a Platonic writer of the second century A.D. called Theon of Smyrna, who distinguished eleven symbolic meanings of the four. There were originally only ten, but Theon has destroyed the perfection of the ten by adding an eleventh.

The first four which Theon defines is what he calls the musical tetraktys. In Greek music there were four main musical harmonies in the diatonic scale. Pythagoras' discovery of them will be discussed soon. The numerical series 1, 2, 3, 4 embraced all these four main ratios of which the first was termed the fourth which was expressed by the ratio of 4:3. The second consonance was the fifth in the ratio of 3:2; the third the octave in the ratio of 2:1; and lastly, the double octave or 4:1. These musical accords or harmonies were so important because they consisted of such simple numerical relations, such simplicity in the eyes of the Pythagoreans being associated with the immortal substance of the gods. These simple ratios were also the most pleasing to the

ear and immediately struck kindred harmonies in the psyche of the hearer. Thus the four and the musical ratios also represented the parts of the psyche, not just that of the individual, but also the cosmic psyche which animated the universe. These musical harmonies, therefore, explained the structure of the cosmos.

The second tetraktys or four reflects the later Pythagoreans' application of this mystical number to the cosmic psyche; nevertheless Pythagoras was still the inspiration. This second four was expounded in writing by Plato in the fourth century B.C., but on Plato's own admission it goes back to earlier Pythagoreans and even to Pythagoras himself. This interpretation of the four is put into the mouth of Timaeus, a Pythagorean from the Italian city of Locri, by Plato in his work entitled *Timaeus*. This dialogue of Plato is an exposition of Pythagorean beliefs of the fifth century B.C. The tetraktys of Timaeus is called the double four because it consists of two series of numbers, one odd, the other even. Both series begin from the One, the first being 1, 2, 4, 8; the other 1, 3, 9, 27. The sum of these numbers is fifty-five, another important number in Pythagoreanism. The Platonist Crantor arranged these two series on two lines whose apex was the One in order to represent diagrammatically the structure of the cosmic psyche. Both of these series are geometrical progressions, the former in the ratio of 2:1, the latter in that of 3:1. It was this double tetraktys which Plato employed to form the cosmic psyche. This cosmic psyche consisted of three main metaphysical components: the circle of the same, the circle of the different and being or existence. The double tetraktys was added to the circle of the different to represent the system of the seven planets and to symbolize the distances between them. This is, of course, a more sophisticated version of Pythagoras' music of the spheres. The musical significance of the tetraktys also comes in here, the planetary music being implicit in Plato's account of the cosmic psyche. It has been denied that Plato attached any musical meaning to the double tetraktys, but some ancient authors, notably Ptolemy the great mathematician and writer on music, stated that it was a useful musical scale although out of the range of human hearing. Likewise Theon insists that the harmony of the cosmos consists of these first two fours: the musical and the double tetraktyes.

The third four or tetraktys comprehends all physical magni-

tudes in the same proportions as the double tetraktys. The double four was also symbolic of the progression from the geometrical point (1), through the line (3 and 2), and plane (4 and 9), to the solid or cube (8=2 to the power of three, and 27 = 3 cubed). The third tetraktys is therefore complementary to the second. In the third tetraktys 2 and 3 correspond to the straight and curved line, 4 and 9 are planes bounded by (a) straight lines, or (b) curved lines, as in circles. The final result of this genesis of solid bodies is either the cube or the pyramid.

The fourth tetraktys or four is symbolic of the four elements: air, earth, fire and water. The fifth, sixth, and seventh fours are less interesting symbolic meanings, the fifth four, for instance, alluding to the first four geometrical shapes. The sixth tetraktys is more interesting because it alludes to the succession observed in growing things: 1 = seed; 2 = height; 3 = depth; and 4 = thickness or solidity. This is an arcane reference to the first four elements in the intelligible creature of Plato which the demiurge or divine creator copies when he is making the world. The intelligible creature is the archetype of all growing things or animals and contains within itself the numerical series from 1 to 4 in the form of the One and the three dimensions. Growing things are also produced by nature so that the Pythagoreans and their master always symbolized nature by the number four. There is an allusion to this in the Pythagorean oath with its 'roots of ever-flowing nature'. Even Plotinus and Porphyry and Iamblichus employ this symbolism. The seventh, tenth and eleventh fours are symbolic of the human community, the four seasons and the four ages of man. These last two are directly ascribed to Pythagoras by Diogenes Laertius.[3] This symbolism of the four ages of man also occurs in other numbers so that Theon (jokingly?) suggests in the first seven years fall seed and childhood, the second seven are devoted to the acquisition of a beard, and the fourth to be gaining of breadth around the middle. These are all commonplace symbols, but again emphasize the cosmic unity which numbers provided for Pythagoras and his followers.

The eighth four is more interesting because Aristotle has a similar meaning. Theon calls this eighth four intelligible because it is concerned with the four faculties of man. The One corresponds to intelligence and mind, the two to knowledge, three to opinion, and four to sensation. This meaning appears to be very

ancient and may belong to Pythagoras. It certainly influenced Plato who employed it in his psychological theories. The reasons behind the identification of the numerical series 1, 2, 3, 4 with the four psychic faculties are as follows:

> Our psyche is composed of the four because there are four faculties: intelligence, knowledge, opinion, and sensation. From these come art and science, and it is because of this that we ourselves are rational beings. Therefore intelligence is the one or monad since the mind contemplates one thing at a time. Just as the individuals in a crowd are indistinct, incomprehensible, and without contour, the mind can only think about a single individual who is distinct from all others. Likewise, in the case of a horse we comprehend it as a unity for individual horses are infinite in number. For all these universals and classes exist as unities. And that is why one says when defining each of these existents that a man is a rational animal or a horse a neighing animal. It is because we think these ideas with our mind that the mind is a one or monad. Also the indefinite dyad or two corresponds to knowledge. This is reasonable because every logical demonstration and every scientific belief, as well as every syllogism, consists in drawing a conclusion about something from certain premises. Of course, this conclusion varies. Knowledge is termed the two because there may be two different conclusions from known premises. The three represents opinion, and rightly so because opinion has many objects within its purview.[4]

This explanation of the psychic symbolism of the tetraktys is very confused and only really elucidates the reason for the intelligence being known as the One. The main reason for the mind being regarded as a unity or the one is the fact that it is concerned with universal or general ideas. When one thinks of a horse it is never a particular horse, but something which embodies every quality of 'horsiness'. A further conclusion from this notion of the mind as a unity is that it is not divided or destroyed like material objects. The mind is not like a number which can be divided into fractions, but resembles the monad which for Plato and the Pythagoreans had no parts. Therefore, the mind being the one, it imitates the supreme One which is the divine mind ruling over the numbers in the immaterial world of ideas. The explanation

why the two is equal to knowledge is unsatisfactory and probably corrupt. The two is knowledge because knowledge demands both a subject and an object or two separate elements which, when combined, produce it. The reason for the three being opinion is likewise garbled, and the four as sensation is omitted altogether. A more probable reason for the three being equivalent to opinion is that Plato in the *Republic* distinguishes four levels of reality, the third being assigned to opinion or doxa. The three also corresponds to the plane or surface of a solid geometrical figure so that it is closer to the three-dimensional world than the two or one. So too opinion is closer to the world of the senses. Sensation or the senses themselves are represented in other writers on Pythagoreanism by four so that their reasons for this supplement the above writer's omission of such an explanation. The four was identified with the physical world which the senses perceived.

The ninth tetraktys which Theon defines is that of the components of a living animal. The one stands for reason, the two corresponds to the heart, three to the desires, and four to the body because four is symbolic of the solid figures of geometry which are the cosmic bodies. This is just a variation on the eighth tetraktys which deals with the Pythagorean theories related to the parts of the psyche. These psychic parts were located in the various parts of the body: reason in the head, the courageous element in the heart, and the appetites and desires in the abdomen.

The most important meaning attached to the tetraktys is that of the cosmic creator and creators. Some Pythagoreans took the view that the divine numerical series of one to four was itself the creative power in the cosmos. In this variety of Pythagoreanism the numbers themselves are creative. This is the ancient view of Pythagoras himself. Other Pythagoreans believed that the supreme god was identical with the creative numbers. Others believed that the creative god was lower than the divine numbers and used them as a model for the cosmic creation. Still other Pythagoreans thought that the One was the initiator of creation, but that the two and three and four finished off the job, these numbers being lesser divinities. This bewildering variety in the explanations of the creative activity of the tetraktys has one thing in common: the numbers are creators of the cosmos and the

numbers are gods. Hierocles, a Pythagorean of the fifth century A.D., represents the view that the tetraktys is the supreme god:

> But how does 'god' come to be the four? This you may learn in the sacred book ascribed to Pythagoras, and in which 'god' is celebrated as the number of numbers. For if all things exist by his eternal decrees, it is evident that in each species of things the number depends on the cause that produced it. There we find the number, and thence it is come to us.[5]

Thus it can be seen that the tetraktys occupied a central place in the thought of the Pythagoreans. To later generations of Pythagoreans it became the symbol of the human psyche, and even Pythagoras had compared the psyche to a square. The tetraktys is, as the Pythagorean oath tells us, the source of nature or the creative power of the first four numbers which flow into the solid bodies of the physical world. Such things as the seasons, the elements, the four ages of man and the parts of growing things like trees were also symbolized by the tetraktys.

Five was an important number because it was the middle of the ten, the central number. It was sometimes called marriage because it contained a male or odd number, and an even female one (2+3=5). As such it was sacred to the goddess Aphrodite. The number five was also symbolic of the five atomic shapes which Plato later borrowed from the Pythagoreans. These shapes were the pyramid, cube, octahedron, icosahedron and dodecahedron. They represented respectively fire, earth, air, water and ether or the substance which the demiurge used to form the zodiacal circle. Hippasos, an early follower of Pythagoras, was expelled from the society for revealing to non-Pythagoreans the properties of the dodecahedron. It was believed in antiquity that Hippasos was drowned at sea because of divine anger at his unbecoming revelations of the master's doctrines, but this is only a misunderstanding of the custom Pythagoras had of erecting cenotaphs for members who had been expelled or initiates who did not succeed. The bodies of people drowned at sea were usually not recovered so that cenotaphs were erected on the beach for them. Five also represented the five planets then known, as well as the five zones of the earth said to have been discovered by Pythagoras. He was, of course, the first man to contend that the earth was spherical in shape and possessed antipodes.

The six was an important number because it was the first perfect number, its products adding up to six (i.e. 1+2+3 = 6). It was also called marriage for a similar reason to the five, only multiplication is involved here not addition as in the five. Both five and six are circular numbers, that is, their powers always produce products ending in five or six; hence five cubed is 125, six cubed is 216, a very mystical number for it represents the intervals of time between each reincarnation of Pythagoras and other mortals. Five differs from six in that its cube (125) in its last two terms repeats its square (25), whereas the six has no such property (six squared is 36, cubed 216). For Philolaus, an early follower of Pythagoras, six was a crucial number because it represents the six levels of animate nature, beginning from the spermatozoa and culminating in the life of the gods. The lowest level of life is the organic and biological process of the germination of seed. The second step is that of plant life. The third level corresponds to the irrational life of animals. The fourth to the rational being of man, the fifth to the race of daimones who are the mediators between men and gods. The sixth and last level represents the life of the gods themselves.

The seven was considered to be a number which cannot be generated by any number within the ten or decad. Generation is another term for multiplication so that no two numbers within the decad, when multiplied, can produce the seven. Likewise it cannot produce another number within the decad for 7 by 1 is 7 and 7 by 2 is 14, a number outside the confines of the sacred decad. Five is not generated by another number within the decad, but it can generate 10 by means of 2 so that it is not a virgin like 7. Seven is thus a prime number which Pythagoras and his later follower Philolaus symbolized by the virgin goddess Athena. Since Athena was born from the head of Zeus seven also represents the mind. The seven was also significant because there were seven heavenly bodies which formed the music of the spheres. Seven was associated with seven-month births and Hercules as we have noticed in the *Sacred Discourse* of Pythagoras to the Latins. Seven was also important because four sevens are twenty-eight, the second perfect number in the numerical series.

The eight was significant because it was the first actual cube. Owing to this harmony between its parts (two cubed is equal

to eight and 2+2+2+2 = 8) it was called 'Harmonia', the wife of the legendary Kadmos, who like Pythagoras was of Phoenician descent. According to the Orphics and the ancient Egyptians there were eight main gods, an idea with which Pythagoras was obviously familiar. Because of its harmony eight also became a symbol of friendship for Philolaus. It was, therefore, also called Eros. The nine was alternately called Okeanos, the god of the great sea which girdled the earth because nine is the limit of the numbers for after it comes the ten; and it was also termed Prometheus who was strong, because the nine was powerful enough to hold back the other numbers in the decad. Being the largest number in the decad and the turning point before the numerical series began again (ten was associated with unity as was 100 and 1,000) the nine was very important. It was a symbol of justice because its square root is three, and its factors three and three, being both equal, are a fit image of retaliation (or as the Greeks called it, 'to antipeponthos'). Four was a symbol of justice for a similar reason. Pythagoras named the nine 'Kouretis' because it was sacred to the three Curetes, mystical deities of Crete.

The importance which the Pythagoreans attached to the decad or ten is a result of this number's being the basic unit of counting. Once ten has been reached the series is repeated *ad infinitum*. The decimal system of the Greeks doubtless influenced the august significance attributed to the decad, but there are many other reasons. Ten is the perfect point at which to repeat the process of counting because it is close to the source of number, the One, and unlike sexagesimal systems of arithmetic, it has numbers within its confines which are peculiarly perfect and form the first principles of number. In the eyes of the Pythagoreans it was no accident that the powers of ten are so perfect and comprehensible: divine necessity willed it. The ten is the symbol of limit and form which interrupts the continuity of infinity enabling men to count. The numbers composing the decad were identified with gods, as we have seen, because numbers were the most immaterial and abstract creation of the human mind and closest to the immateriality of the gods. Thus ten came to mean for Pythagoras the sum of the divine units which literally held the cosmos together. Philolaus and other Pythagoreans believed that the cosmos consisted of ten planets which danced about the central fire. To account for the fact that

they could only see nine moving bodies they invented the counter-earth which was supposed to be invisible. Owing to the peculiar perfection of ten Pythagoras named it 'panteleia' or 'the all-perfect'.

From the foregoing it can easily be seen that Pythagoras associated numbers with gods. The other properties of numbers were also mystical for number was not a creation of the human mind, but something which exists in itself outside the mind of man or any other intelligence. The ten is perfect because it is a living being revealing to man its wonderful properties. To understand the characteristics of numbers and to meditate on the meaning of unity is to commune with the gods. Even the musician who counts the beats of musical time is in contact with these gods on an emotional and intuitive level for, according to Leibniz, music is the expression of a soul ignorant of its ability to count. But he who understands the numbers behind music is a god. Now we must turn to the contribution of Pythagoras to music.

EIGHT

THE COSMIC MUSIC

In most of the ancient biographies Pythagoras appears as a musician of legendary proportions. As such he is in the tradition of the other mystical bards like Orpheus and Linus who exerted occult influences by the power of their music. Pythagoras not only employed music to create an ineffable aura of mystery about his own personality, but also used it to develop cohesion in the society which he founded at Croton. Within that society music educated his followers and purified their psychic faculties. The role of music within the Pythagorean society must be discussed first, and then the so-called musical cures of Pythagoras must be examined, cures which established his reputation as a performer of miracles. Next the discovery of the harmonic consonances by Pythagoras will be investigated together with an analysis of the musical theory of the master. This will, of course, be much simplified for a biography is hardly the place to discuss the complex theories of Greek music. Lastly, Pythagoras will appear in his most sublime role: the only mortal (or god?) who could hear the music made by the heavenly bodies. The various theories about the nature of this cosmic music will also be briefly touched upon.

Hellenic mythology is filled with musicians who possessed supernatural powers. The music of Orpheus could charm the gods of the nether world, and Amphion with his lyre moved rocks and stones to form the walls of ancient Thebes. This is because of the Greek love of proportion, harmony and symmetrical form. The cult of Apollo and the Muses also influenced the idea that music and some musicians were divine. When Apollo appeared on Olympus, all the gods grew enamoured of his lyre-playing. The avatar of Apollo, Pythagoras, also charmed with the magic of his music. Like Apollo Pythagoras only played

the lyre for he considered the flute unbecoming. In this he is a truly Apolline manifestation. The Hellenes developed a complex system of dance-steps and poetical rhythms which have never been fully understood. Their musical science is largely an enigma, and their musical notation survives only in a few fragmentary inscriptions. Greek music might sound foreign to a modern ear because its consonances and intervals are different from those of later forms of European music. Much of their music was a combination of voice and instrumental accompaniment, purely instrumental music not being as highly esteemed. Instrumental music unaccompanied by the voice was even condemned by the puritanical Plato who regarded the virtuoso instrumentalist with suspicion. This was because the musical modes were always regarded by the Greeks as manifestations of underlying moral attitudes; thus Plato could argue that the Lydian mode was too luxurious and soft for the citizens of his ideal state. Both the Lydian and Ionian rhythms were unpopular with the Pythagoreans owing to the chromatic harmonies and instrumental dexterity exhibited by these two types of music. The simpler and slower Dorian mode was preferred by Pythagoras and the later Pythagoreans. Music was not just entertainment, for it was the centre of the worship of the gods whose hymns were always sung to a kithara or flute. Music in education was also regarded as teaching morality because it acted as a curb on the physical and aggressive parts of the psyche. Pythagoras, in addition to such beliefs, viewed music as the link between man and cosmos. The cosmos to him was one vast harmonic ratio, which in turn, consisted of smaller ratios, all of these together forming the cosmic harmony audible only to Pythagoras.

There can be no doubt as to the instrumental dexterity of Pythagoras whose favourite instrument was the lyre. He was also a good singer for he used to imitate the cosmic music for the benefit of his disciples by singing it to them. Pythagoras employed music to educate his followers:

> Pythagoras believed that practical pursuits inculcated via the senses were of primary importance for mankind. This could be accomplished if they could view beautiful shapes and forms and hear beautiful rhythms and melodies; thus he was the first

to establish a musical education by means of certain rhythms and melodies. From these cures were obtained for the bad characters and passions of men, and the harmonies of the psyche's faculties were restored to their pristine order. From these melodies he also devised ways of checking and healing bodily and psychic maladies. By Zeus! the most wonderful thing of all was that he personally composed so-called musical arrangements and fingering exercises for his disciples, devising by divine inspiration mixtures of diatonic, chromatic and enharmonic melodies by means of which he easily changed and curbed the psychic passions which had recently arisen in his followers, passions which luxuriated in pain and anger, pity and jealousy, traumatic fears, desires in various shapes and aggressions, appetites, together with slackness, sluggishness and vehemence. By suitable melodies as if by certain life-saving concoctions of herbs he restored each of these disturbances to the correct harmony which is virtue. In the evening when his disciples were going to bed, he banished the mental tumult acquired during the day together with their reverberations and purified their agitated minds. He also made his disciples tranquil and in a mood to have good dreams which would prove prophetic. When they arose on the morrow, he freed them from their nocturnal torpor, languor and inertia by means of certain peculiar songs and melodies which were performed either with the lyre or the voice in an unadorned arrangement. For himself he neither composed nor produced anything like the melodies to the lyre or voice his companions heard, but employed a divine method of arcane and unfathomable dimensions. Concentrating his hearing and mind he immersed himself in the drifting harmonies of the cosmos. According to him he alone could hear them and understand the harmonies and concords of the spheres and the heavenly bodies which moved along them. The universal music was at once more fulsome and overpowering than mortal melodies, consisting as it did of unlike elements and variegated sounds of bodies whose speed, size and position were so variable; these bodies being arranged in relation to one another in the most musical of ratios to produce a melody which vibrated through the wondrously beautiful motion and melodious convolutions of the sky.[1]

Pythagoras must have been an excellent performer on the lyre as well as a composer of original melodies. Although he was not able to imitate Orpheus who could move rocks and trees by his playing, Pythagoras could purify the minds of his disciples. The above passage from Iamblichus also gives us an insight into the daily routine of the esoteric circle of the Pythagorean society. We have already examined a typical day in the life of the akousmatics who did not share the secrets of the inner circle. Pythagoras purified the minds of his closest disciples by music, both in the morning and in the evening. All the psychic disturbances and traumas of the day were dispelled by his singular harmonies and melodies. This psychic therapy prepared them for the night and sleep which played an important role in Pythagoreanism. Too much sleep was bad because it caused mental torpor and dulled the psychic faculties which should be recalled to their primordial order. This psychic harmony was disturbed when the psyche entered the body, but Pythagoras' melodies rectified the damage done by the bodily element. Ideally the psyche should move with the cosmic harmonies, aloft and away from the earth; only Pythagoras could do this whilst still in a body. Nevertheless, by means of his melodies he prepared his followers for the day when they should rejoin the choir of immortals and the cosmic music. He also imitated the music of the spheres on his lyre and with his voice in order to prepare them for death. This preparation for the release of the psyche into the realms of the cosmic music was the education Pythagoras instilled in his followers.

Although sleep interrupted the rationality of the psyche it could still be useful for it produced nocturnal visions which were prophetic. One could term this inducing of clairvoyant states by music a novel form of divination of which Pythagoras was particularly fond. The music of Pythagoras not only cured the mental ills of his followers, but also produced nightly phantasms which in Hellenic legend always came from the gods. It is hard for us to understand the role which divination and prophetic dreams played in the life of the ancients. If one examines the chronicles of ancient Greeks in extreme and perilous circumstances, say the *Anabasis* of Xenophon, one is astounded by the importance dreams and prophecy assume. In times of danger the Greeks would not act until the omens had proved propitious. This causing of prophetic dreams is just another aspect of Pythagoras as a

god incarnate for only the gods sent visions. Music, therefore, was a predominant influence in the daily routine of the society, not only preparing the psychic faculties of his disciples for the release of the psyche, but also educating them by drawing their attention to beautiful sounds and forms. Apparently Pythagoras and his later followers believed in the beauty of individual sounds, there being particularly lovely musical notes just as there are beautiful shapes of supernal perfection such as the circle. This could be termed aesthetic education and played an important part in ancient Greek culture, Socrates, for example, in the *Philebus* of Plato referring to it. According to Iamblichus Pythagoras was the first to introduce this musical education into Greece. The Hellenic word 'mousike' meant not only music, but all forms of artistic expression which had the creation of beauty as their goal. Pythagoras not only demonstrated beautiful melodies to his disciples, but also showed them the beauty of mathematics, the perfection and symmetry of certain geometrical forms.

The musical therapy of Pythagoras was not just confined to his disciples, but was also used to cure madness in others. He employed music and charms sung to the lyre in order to heal the sick. In this way he performed many miracles. Porphyry tells us that he had special 'healing' (paionia) melodies by means of which he raised up those suffering physical ailments.[2] Unlike other wonder workers of antiquity who tended to heal by the laying on of the hand, Pythagoras used melodies and charms almost exclusively. Egyptian and Babylonian medicine is full of spells and charms sung over the patient which were a supplement to surgery and drugs or a last resort if these two methods failed. Plato in the *Charmides* also mentions the charms of the legendary Thracian Zalmoxis who was also said to be the slave and later the follower of Pythagoras. This musical medicine is described by Iamblichus:

> He considered that music contributed greatly to health if used in the right way. Such a means of purification did not assume a subordinate place in his medical practice; thus he called this method musical medicine. In the spring he applied himself to the following melodic method: he would sit in the middle of his disciples who were able to sing melodies, and play on his lyre. To the accompaniment of Pythagoras' lyre his followers would

sing in unison certain paeans (chants usually to Apollo who was also called 'Paian' or the 'healer') by which they appeared to be delighted and became melodious and rhythmical. At other times his disciples also employed music as medicine, and there were certain melodies made to cure the passions of the psyche, as well as ones for despondency and mental anguish. In addition to these medical aids there were other melodies for anger and aggression and for all psychic disturbances. Another type of melody was devised to counteract the desires. The Pythagoreans also employed dancing. Pythagoras and his followers only used the lyre because the master considered flutes to have an insolent and festive tone which was not fit for a free man. He also employed verses from Homer and Hesiod to correct the psyche. Amongst his other deeds Pythagoras is also said to have quelled the drunken madness of the youth of Tauromenium by having a flute-player strike up a spondaic melody. One night this youth was drunkenly courting his mistress at the door of his rival's house which he was about to burn down. He had been aroused and inflamed by a Phrygian melody played on the flute. Pythagoras soon put an end to this. He happened to be star-gazing at the time and recommended to the flute-player a change to the spondaic rhythm. All at once the youth's sanity was restored and he returned home.[3]

Once again this passage gives us some intimate details of the life of Pythagoras amongst his followers. This description of Pythagoras sitting with his disciples in a meadow or similar place in spring-time and playing on his lyre whilst they sang songs of healing is unusual for antiquity and is perhaps only to be matched by the Platonic dialogue *Phaedrus* in which Socrates and Phaedrus sit in the Attic countryside discussing Eros and the psyche. This cameo of the ideal Pythagorean life conjures up a mystical atmosphere pervaded by music. The Pythagoreans not only possessed a spontaneous joy in music, but could alter their moods and consciousness at will by its means. Pythagoras did not rely on chance but was completely in control of musical expression and knew that the spondaic rhythm with its slowness and stateliness would cure the Tauromenian youth of his madness. He also employed verses from Homer and Hesiod to calm the psyches of his followers. He was fond of quoting the

lines from the *Iliad* in which his avatar Euphorbus met his fate at the hands of Menelaus. Thus the epic poets also instructed his disciples in the basic doctrines of the master. Iamblichus also mentions in passing dancing as a means of curing certain psychic and somatic ills. The most striking thing about all this is its typically Greek mentality. Most of Pythagoras' revolutionary thoughts on music were already nascent in the Hellenic love of music and dancing so that his musical philosophy would appeal to his fellow-countrymen.

Much of Pythagoras' musical medicine, especially the charms, was traditional and was to be found in other cultures; but he did revolutionize ancient medicine in his conception of health, both psychic and physical, as a harmony. He must have learnt much concerning opposites and their relations within the cosmos and the human body and mind from the Magians of Persia, but the more theoretical aspects are certainly his own invention. Health being a harmony of the bodily constituents or humours became a basic tenet of Hippocratic medicine so that Pythagoras with his emphasis on harmony anticipated the thought of Hippocrates. Likewise the psyche is a harmony of ratios which imitate the order in the rest of the cosmos. According to Porphyry[4] Pythagoras regarded the cosmos as a network of ratios and proportions which were invisible. Similarly the ratios of the psyche were likened to winds which were as invisible as the breath in the ether drifting through the cosmos. Since the cosmic music pervades the ether whose ratios form it, so too a music and harmony should be made to permeate the psyche to restore it to health. Later Pythagoreans compared the psyche to a harmony which the body as a sort of lyre produced upon its strings. When the body sounded in tune so did the psyche. This theory is slightly materialistic and was not held by Pythagoras himself who definitely separated body and psyche as can be seen by the different melodies he prescribed to cure psychic and somatic disturbances. In this sense the health of the psyche was not connected with the harmony of the body. This concentration on psychic and mental disturbances by Pythagoras is unique in antiquity when health was largely connected with bodily phenomena. This separation of body and psyche is due to Pythagoras' debt to the Orphics who believed that the body was the tomb of the immortal psyche. Thus in this dualism both the Orphics and Pythagoras were

outside the mainstream of Greek thought and medical practice. It was impossible for most Greeks of antiquity to accept psychic immortality because they viewed the body and psyche as being interdependent. Neither did the monotheistic religions accept psychic immortality, for their immortality is a resurrection with a body, not a disembodied existence as envisaged by Pythagoras and the Orphics.

Before we turn to the discussion of how Pythagoras discovered the musical consonances it is interesting to recall the role of sensation or the senses in the musical education of Pythagoras. Pythagoras did not immediately embroil his disciples in abstract theory concerning mathematics and music, but first conditioned them to appreciate beautiful sensations, beautiful colours, shapes or sounds. After he had demonstrated to them the power of music in the material world he went on to explain the invisible mathematical reasons for these manifestations. This was purportedly the method of Plato who led his followers upwards to the ideal beauty by means of the lower physical aspects. Plato, however, is not entirely consistent for in a famous passage in the *Republic* Socrates recommends a music which consists entirely of mathematical relations without any audible content at all. This was not the way of Pythagoras who never divorced audible music from its ideal mathematical content. The music of the spheres is not just ideal, but is a physical reality. When Plato employs the theme of the cosmic music it is in a context of the world of the departed psyches who alone can hear its ideal form. But Pythagoras contended that he could actually hear it whilst he was in a body because his senses were superhuman. Pythagorean music, therefore, is a blend of theory and practice, neither of which is ever severed from the other. When Pythagoras discovered the musical consonances it was by means of his senses. The circumstances in which this discovery occurred were anything but ideal and mystical for he heard the hammers of a blacksmith sounding the musical consonances as he was walking by. Pythagoras then went about accounting for this in a most empirical way. He always knew that for man the senses introduced realities beyond themselves, but unlike Plato he never attempted to disassociate the material from the immaterial.

Pythagoras was the first to discover the mathematical basis of music so that what had formerly been only a system based on

probability and guess-work was transformed into a rational pursuit. Hellenic musicians before the discovery of the musical consonances had tuned their stringed instruments by ear, torturing the tuning pegs in the process, as Plato put it; and even after Pythagoras' great discovery some musicians still insisted on tuning their instruments by ear alone. Plato went to the other extreme by demanding that theoretical music should dispense with hearing altogether and concentrate on the mathematical ratios forming the musical harmonies. Pythagoras combined the two methods so that his music was at once empirical and theoretical. There was still a gulf between the audible music played on instruments and the psychic harmonies of pure mathematics and thought even when the numerical foundation of music had been laid by Pythagoras. A symptom of this dilemma was the recognition by Pythagoras that the division of a string into two halves could never produce equality between the two respective halves because the bridge on the monochord (an ancient device used by Pythagoras to mark the mathematical consonances off, and by the employment of a movable bridge, enabled them to be sounded at will by moving the bridge to the numbers marked on the body of the instrument, thus an equivalence of numbers and sound could be perceived by the senses directly) was so thick that it did not divide the string into two exact halves, the ideal bridge being immaterial. There was also the problem of the quality, thickness and tenseness of the material strings. Ideally in the mind the division could be made and the mathematical result was perfect, but owing to the intransigence of the physical world the ideal music could never be heard by mortal ears. The goal of Pythagoras and his followers was to hear the music of the gods who were themselves numbers and could only be viewed by a psyche purified by harmony and released by the power of music. One of the works attributed to Pythagoras by antiquity was entitled *Lysis Psyches* or *Release of the Psyche*, a work which evidently contained a treatment of music and its contribution to the release of the psyche into the cosmic music of the gods in the ether. The intelligences moving the heavenly bodies were, of course, also gods in the mind of Pythagoras. All the ancient writers on Pythagoras and music are unanimous that he was the first to discover the mathematical basis of music or the consonances. The arithmetical series of 1,2,3,4 formed the corner-

stone of Pythagorean music, and happened to be the sacred tetraktys as well so that Pythagoras must have congratulated himself on his discovery of divine laws.

The fundamental instrument of early Greek music was the tetrachord or four-stringed lyre which was tuned in accordance with the main concordances; the tetrachord was also the foundation of Greek harmonic theory. The consonances were as follows: the octave or diapason in the ratio of 2:1; the fifth in the ratio of 3:2; the fourth or 4:3 and the tone or 9:8. There were, of course, other consonances which were simply a combination of some of the foregoing, such as the union of the diapason and the fifth. Iamblichus tells the following story of how Pythagoras discovered these consonances:

> Once he was engrossed in the thought of whether he could devise a mechanical aid for the sense of hearing which would prove both certain and ingenious. Such an aid would be similar to the compasses, rule and optical instruments designed for the sense of sight. Likewise the sense of touch had scales and the concept of weights and measures. By some divine stroke of luck he happened to walk past the forge of a blacksmith and listened to the hammers pounding iron and producing a variegated harmony of reverberations between them, except for one combination of sounds. Amongst the harmonies he recognized the octave, the fifth and the fourth, but realized that the interval between the fourth and the fifth was not a consonance in itself, yet otherwise was equivalent to the difference between these two consonances. Delighted that his wish had been granted by a god he ran into the forge and by various experiments on the masses of the hammers discovered the difference in their tone. This did not depend on the force employed by those delivering the blows nor on the shapes of the hammers nor on the changing form of the iron under them. He weighed the hammers accurately, noting their weight carefully, and returned home. Employing a single peg fastened into the corner of the walls so that the difference or variation of peculiar pegs should not intrude themselves, he attached to the peg four strings of the same material and formed of an equal number of strands; their thickness was the same and they were twisted in the same way. He suspended different weights

> from the ends of each string, making the lengths of the strings equal in every respect. He struck two strings at once, now one pair, now another, and discovered the aforesaid musical consonances, each of which being connected with a different pair of strings. He perceived that the string with the greatest weight and the one with the least sounded the octave between them.[5]

Needless to say he discovered the other consonances in the same way. This experimental method which Pythagoras employed on this historic occasion proves that he was not just a religious mystic in the oriental mould, but a follower of the scientific revolution which the Ionians had initiated in his lifetime. His mysticism was always based on reason and the empirical method which of course he transcended by his powerful intellect. He had been a pupil of these Ionian philosophers or 'physikoi' in his youth so that in his most mystical speculations he always employed scientific means and rational argument. This shows that Pythagoras was a product of Greece and its adoration of intellect and free-thought. Not constricted by the torpor of a society ruled by religion the Greeks produced an amazing number of individuals who were not afraid to live by their wits and revolutionize the consciousness of humanity. We cannot be sure when Pythagoras discovered these intervals of music, but it may have been in Samos on his return from Egypt. It has often been denied that Pythagoras invented any sciences or made any contribution to scientific discoveries, but without a man of his eminent and creative ability there is a serious gap in the history of Hellenic science and philosophy, let alone mysticism. The revolution in music, astronomy, mathematics and religion one sees in the dialogues of Plato did not just happen overnight, but goes back to the fifth century and beyond and all points to Pythagoras. We can safely say, therefore, that Pythagoras discovered the mathematical basis of the musical consonances.

The discovery itself has been summarized and explained as follows in a rather facetious fashion:

> There were five hammers in action. 'Might he weigh them?' Ah, miracle of miracles, the weights of four of them were in a proportion of 12, 9, 8, 6. The fifth, the weight of which bore no significant numerical relation to the rest, was the one that was

> spoiling the perfection of the chime. It was rejected, and Pythagoras listened again. Yes, the heaviest hammer, which was double the weight of the lightest, gave him the octave lower. The doctrine of the arithmetic and the harmonic mean provided him with the clue to the fact that the other two hammers gave the other fixed notes in the scale. Surely it was the will of God that he had passed that blacksmith's shop. He hurried home to continue his experiments – this time, one might say, under laboratory conditions.[6]

Farrington has nothing to be facetious about here for the above account contains some rather elementary errors. For instance, it was not the fifth which was spoiling the chime, but the tone (in the ratio of 9:8, numbers of unequal perfection) or the difference between the fifth and the fourth. This becomes quite clear if one examines the text of Iamblichus just quoted. Farrington goes on to suggest that the hammers would not have given the results which Boethius described (Farrington only read the Latin version of Iamblichus' story contained in the late Latin author Boethius):

> The number of vibrations in a stretched cord depends not on the weight which stretches it, but on the square root of the weight. We lack evidence that Pythagoras, or any ancient, knew this.[7]

This is just splitting hairs for obviously Pythagoras must have known this otherwise he could not have discovered the consonances. Iamblichus says that after Pythagoras had taken details of the weights of the hammers, he went home and attached four strings to a peg in the wall, making sure that they were all of the same thickness and composed of an equal number of strands. He then attached weights to the strings corresponding to the blacksmith's hammers, four of which weights were in the proportion of 12, 9, 8, 6. When he simultaneously struck the strings with the greatest and lightest weights, he discovered the octave which is in the proportion of 2:1 (the greatest weight was 12, the lightest 6, both of which produced the ratio of 12:6 or 2:1). He repeated this experiment in order to discover the other intervals. There is also a later story that the Pythagoreans discovered the consonances or intervals by experimenting with buckets of water. If an empty bucket were struck simultaneously with a bucket half-filled with water, the ratio of 2:1 resulted.

It is immaterial how Pythagoras discovered the consonances. It remains true that his discovery laid the basis of Greek musical theory. The discovery of the mathematical foundation of music was important because Pythagoras now perceived a mystical interrelationship between arithmetic, geometry, music and astronomy. He had believed that mathematics was the reality behind the physical world and had studied geometrical shapes to see how they might give rise to natural forms such as man or horse. The heavenly bodies too had received his attention and he knew from his studies in Babylon that the planets and stars could have numbers assigned to them. Their regular cyclical motions could be accurately measured and they appeared to possess a divine intelligence which enabled them to orbit in such perfect regularity. Now he had discovered that music was number as well so that he could suppose that everything in the cosmos was number or resembled it. But how was music related to the cosmos? Some writers on Pythagoras deny that he was the inventor of the planetary music. This, however, does not square with the facts. He had studied in Babylon and must have known about the mathematical system of the planetary and stellar deities which the Babylonians worshipped. If the essence of the star-gods was number (the Babylonians having assigned a definite number to each planet and star), and number was also the foundation of music, then the stars and planets must somehow be musical. The Homeric poets had anticipated this theory to a certain extent for in the Homeric hymn to Ares the planets are addressed as a sort of choir of divine voices; and in the hymn to Hermes the seven-stringed lyre is introduced. We also know that the seventh century (B.C.) poet Terpander was reputed to have added the seventh string to the lyre in imitation of the planetary music. Thus centuries before Pythagoras the Greeks had known about the music of the star-gods; perhaps the idea of the cosmic music ultimately goes back to Orpheus, the mythical believer in the power of number and music. Pythagoras rationalized the system and gave it a scientific and mystical meaning.

We have already seen that Pythagoras claimed that only he could hear the cosmic music. He attempted to convey some impressions of it to his disciples by imitating it on the lyre and singing. The tetraktys was the symbol of the cosmic music and Pythagoras as the god of the tetraktys was the only person in the

flesh who could hear it. The fact that he could hear it proved his divinity in the eyes of his disciples. His ancient biographers[8] explained this extraordinary faculty by saying that Pythagoras had extremely acute senses, and it was to this that the verses of Empedokles extolling his intellect and perception allude. Delatte explains it in terms of hallucination[9] (perhaps Pythagoras had been eating too much poppy-seed). Pythagoras not only heard it, but also described it and gave explanations for it. The cosmic music has already been shown to be derived from Pythagoras' discoveries in the mathematical and musical fields. His discovery of the musical intervals of the tetrachord and his experiments with the heptachord or seven-stringed lyre led him to speculate whether these musical consonances and scales might not be a cosmic phenomenon. For were there not seven planets corresponding to the seven strings of the heptachord? If the heptachord can produce musical harmonies, the seven planets might also consist of a harmony. This harmony is inaudible to human hearing because the psychic harmony of mortals, normally in tune with the cosmic music, has been disordered by being in a body. Plato in the *Timaeus* alludes to this theory when he states that the two spheres in man's head, which correspond to the two main cosmic motions, are disordered when the psyche arrives in a body so that they cannot harmonize themselves with the movements of the cosmic psyche.

The cosmic music was originally based on the seven-stringed lyre for the following reason:

> The original form of the theory of the 'harmony of the spheres' no doubt had reference to the seven planets only (including in that term the sun and moon), the seven planets being supposed by reason of their several motions to give out notes corresponding to the notes of the heptachord.[10]

The cosmic music could not refer to ten planets, as in the cosmic system of Philolaus, for the original Pythagorean theory of tones only recognized the seven notes of the heptachord. But the system of Philolaus and its ten planets is the one Aristotle mentions when referring to Pythagorean cosmological theories, although, when he alludes to the theory of the cosmic music, Aristotle does not specify whether there were seven or eight notes. Aristotle is very vague, but Plato's version in the *Republic* is

clearly a reference to an octachord or eight-stringed lyre. Plato has eight spheres, representing the seven planets and fixed stars, which revolve in the heavens, on each of which sits a Siren singing a single note. One should remember that the original Pythagorean musical scale sounded on the heptachord could be increased in range simply by adding other strings. This is in fact what happened. The eighth string was added by one Lycaon of Samos so that Plato was basing his cosmic music on the eight-stringed lyre of Lycaon.

The harmony of the planets presupposes considerable astronomical knowledge. Each planet must intone a note higher than the one below it. This in turn demands an acquaintance with differences in planetary size and speed. There is also the problem of the distances between the planets and whether they correspond to the intervals between the strings of the lyre. Hellenic musicians, including Pythagoras, knew that the difference in notes was caused by the tension and quality of the strings, as well as the number of vibrations. The planets, therefore, must move at different speeds and be of varying sizes. The most common form of the theory states that the moon is the lowest note, whereas the highest one is sounded by the sphere of the fixed stars. The other planets differ by a tone on the ascending diatonic scale. But there is another version which regards the stars as being the lowest note due to their slowness, whilst the moon had the highest because its orbit of the earth is completed in the shortest time of all the other planets. As well as knowing the speed and size of the planets, one had to be familiar with the intervals or distances between them. Are the intervals between the planets the same or do they vary? If they vary, then the quality of the cosmic music will be affected quite substantially. Heath summarizes Plutarch's account of Philolaus' theory of the distances between the planets and the effect on the cosmic music:

> When Plutarch says that the distances of the ten heavenly bodies formed, according to Philolaus, a geometrical progression with 3 as the common ratio, he can only be referring to some much later Pythagoreans. For if, on the basis of this progression, the distance of the counter-earth is represented by 3, that of the earth by 9, and that of the moon by 27, it is obvious that the enormous parallaxes due to the

> revolution of the earth round the centre would be quite inconsistent with saving the phenomena.[11]

However, Philolaus may not have been concerned with parallaxes and the apparently discrepant astronomical consequences of his logical mathematical theory. He had already demonstrated a disdain for observation and empirical evidence by his introduction of the counter-earth which has no basis in observable fact so that Philolaus may not have worried about 'saving the phenomena' and fully accounting for all observable details in the case of his ratio for the intervals of the planets. Therefore, this theory of a geometrical progression may still belong to Philolaus who was a pupil of Pythagoras. The theory of Pythagoras himself would have been much simpler; Porphyry[12] reports in his biography that Pythagoras believed there were seven planets and the counter-earth as well as the fixed stars which produced the cosmic music. These nine heavenly phenomena were termed Muses by Pythagoras, the harmony of them all being called 'Mnemosyne' or mother of the Muses. This theory is very similar to that of Philolaus so that Pythagoras undoubtedly influenced his pupil.

Aristotle says that the Pythagoreans supposed the heavenly bodies intone the cosmic music because they must make some sound in their motions through space. Being of such immense size, the planets had to make some noise as they moved through the medium of the ether or upper air which filled space, just as earthly bodies give off vibrations when they move through the air. The Pythagoreans employed the example of a ship whose rigging and sails sound as it moves along with the breeze; the cosmic ship, consisting of planets and stars, must also emit vibrations and 'rhoizemata', a Pythagorean term meaning 'rushing sound', as they move in the turbulent ether. Men do not hear the cosmic music because they have grown accustomed to it, just as blacksmiths have become inured to the noise of their hammers. Besides, the celestial bodies, revolving ceaselessly in their circular orbits, continually produce their harmonies so that there is no interval of silence from which the cosmic music can be discerned. Absolute silence reigns in the region beyond the cosmos where dwell the numbers and the One; thus the Pythagoreans sometimes refer to the One as 'Sige' or silence. Aristotle

attempted to refute the existence of the cosmic music by arguing that if it did exist, it would have disastrous consequences for the earth. He pointed out that sounds of a high frequency shatter objects and thunder splits rocks, hence the earth should have been destroyed if the music of the spheres did exist. The Pythagoreans would probably have answered that these high-pitched sounds are not harmonies and harmonies do not destroy other objects. Thunder, for instance, was regarded by the Pythagorean musicians as being without contour, that it was a product of the infinite which could be destructive. Harmonies, however, were completely innocuous.

Plato's account of the music of the spheres is even more mystical than that of the Pythagoreans for it can only be heard by disembodied psyches. Plato relates the myth of Er in which the cosmic music appears. This myth tells of Er the Armenian who was presumably killed in battle and his psyche departed for the other world. The gods decided that he was to return to life and tell other men about what he saw and heard in Hades and the Elysian fields. During this journey through the heavens Er saw a vast column of light passing through the centre of the cosmos. Part of this cosmic axis consisted of a spindle with eight whorls attached to it, these eight whorls representing the eight spheres of the planets and stars. This spindle of necessity stands for the cosmic system of stars and planets rotating about the axis of the universe. The spindle image, of course, is derived from the mythological spinners of men's fates. There is a strong astrological influence here. The psychic journey of Er has been termed Orphic, but a similar one to the underworld is also ascribed to Pythagoras himself. In any case the Orphics had views very similar to those of Pythagoras; and when Er describes the music of the spheres one feels sure that his source must be Pythagorean. Er also noticed eight Sirens sitting on the rim of the whorls of the spindle, each singing a single note. The Sirens symbolize the music made by the actual stars and planets and are equivalent to the Muses of Pythagoras. This voyage of the psyche into the cosmic music is obviously based on Pythagoras and his followers. The eight notes of Plato's cosmic lyre are sounded by the seven planets, including the sun and moon, and the sphere of the fixed stars. The highest note is that of Saturn, the lowest that of the moon. The note sounded by the fixed stars was included in a

complicated fashion which need not be discussed here.

The later fortunes of the theory of the cosmic music will not be discussed here, but it is worth noting that the designation 'music of the spheres' refers to a much later version of the cosmic music which Pythagoras and his early followers did not accept. These spheres in Aristotle and later cosmologists were actually material, sometimes consisting of crystal, hence crystalline spheres which emitted the harmony as they moved. Pythagoras and Philolaus did not accept this doctrine of the material spheres. The idea of the cosmic music in the philosophy of Pythagoras supported his claim that he was divine, the Hyperborean Apollo incarnate. It is connected with his conceptions of immortality and reincarnation, for the stars and planets are the abodes of men reincarnated into higher existences. Each individual psyche has music within it so that, when released from the prison of the body, it can contribute its harmonies to the totality of the cosmic music. Music purified the minds of his disciples and prepared them for their own psychic release. Whilst Pythagoras was instructing his disciples in the mysteries of the cosmic music, political troubles were on the horizon for him and his society. The cosmic music is symbolic of the mystical and apolitical values of his society, but he was not to be left in peace to pursue these speculations.

NINE

THE FINAL YEARS

The events dealt with so far, the arrival in Croton, the speeches to the Crotoniates and the Italians, the founding of the society and the wonder-working activities all occurred roughly between the years 518–513 B.C. In 513 B.C. Pythagoras left Italy and returned to Delos because he had heard that his teacher Pherekydes was dying on that island. Some ancient historians place this event later around 508 B.C. when the Pythagoreans were attacked by the rich and powerful Crotoniate Kylon and his followers. Pythagoras was said to have been on Delos when this event took place. The more reliable sources say that Pythagoras was present when the persecution of Kylon happened, stating that Pythagoras had nursed his dying teacher in 513 B.C. Pherekydes was dying of a dread disease so that Pythagoras probably spent some months on Delos. In later times it was forbidden to bury the dead on the sacred island of Delos, but Pherekydes was fortunate enough to have his wish and died on the isle of Apollo. Pythagoras interred his body there and returned to Italy the same year.

The chronology of the important events which followed is not absolutely certain, but an approximate dating will have to suffice. Some time after his return from Delos Pythagoras was visited by the Hyperborean priest of Apollo, Abaris, who became a friend and disciple of Pythagoras. Together they visited many cities in Sicily and Italy. In about 510 B.C. a war occurred between Croton and its powerful neighbour Sybaris. Sybaris was defeated and the city totally destroyed, its territory being incorporated into the Crotoniate state. A few years later in about 508 B.C. a Crotoniate noble called Kylon led a mob to persecute the Pythagorean society at Croton. That same year Pythagoras fled to Metapontium where it was rumoured that he committed suicide. The problem with this is that most ancient authorities state that

he was very old when he died. If he died at Metapontium shortly after 508 B.C. he would have been only a little over sixty. Another explanation, therefore, must be found to account for his survival after the events of 508 B.C.

After he had returned from nursing his teacher on Delos Pythagoras was paid a visit by the Hyperborean Abaris. The Hyperboreans were a mythical people supposed to dwell beyond the north wind. They are mentioned by Herodotus, but he has a sceptical attitude towards their existence. He classes them along with the one-eyed people as being products of the mythical imagination. However the people of Delos insisted on their existence, stating that Hyperborean girls came to Delos and became priestesses of Apollo. As the religion of Delos was very ancient the visits of the Hyperboreans to Delos and other parts of the Mediterranean may have been part of a universal Apolline religion, one of whose holy places of pilgrimage was Delos. Abaris and the Hyperboreans are not as mythical as the Amazons; and it must be remembered that the ancient histories of Alexander the Great, who lived three hundred years after Pythagoras, state that the Macedonian king visited the legendary tribe of the Amazons, allegedly having a child by their queen. Both Herodotus and Plato as well as other Hellenic writers mention Abaris and his famous arrow so that it would not be too unhistorical to discuss Abaris' visit to Pythagoras. Iamblichus' account of this affair is a medley of various sources, chief of which are Herodotus and Heraclides Ponticus. It was not the only contact Pythagoras had with peoples of the far north, for he was also rumoured to have possessed a Thracian slave named Zalmoxis. The visit of Abaris proves once again the cosmopolitan nature of Pythagoras and his philosophy:

> When the Scythian Abaris from the Hyperboreans came to Pythagoras, being un-acquainted with Hellenic education and uninitiated into the philosophy of Pythagoras and advanced in years, Pythagoras did not introduce him to it by subtle theories. Instead of the five years silence and lecturing of the same duration and the other tests, Pythagoras made him suitable all at once for hearing his doctrines. He taught him an abstract of his writings on nature and the gods. Abaris came from the Hyperboreans and was a priest of Apollo who was

> worshipped there. He was an old man and learned in priestly craft. He returned home from Greece in order to store the gold he had collected for Apollo in the temple of the god. On the way home he stopped off in Italy and happened to see Pythagoras. Abaris contended that Pythagoras was especially like the god whose priest he was; he was certain that Pythagoras could be no one else. Neither was Pythagoras like any other man, but really was the god Apollo. Abaris based this conclusion on Pythagoras' sublime deeds, drawing on his divinatory experience as a priest of the god. He gave Pythagoras an arrow which he had taken with him from the temple of Apollo in the land of the Hyperboreans. The arrow had been useful to him in facing the dangers he encountered in his wanderings. Astride the arrow Abaris crossed difficult stretches of country such as rivers, lakes, marshes and mountains and the like.[1]

Iamblichus himself is rather unsure about the provenance of Abaris for he calls him a Scythian as well as a Hyperborean. He could not have been a Scythian because these people were notoriously barbaric in antiquity. From certain signs which Abaris perceived about the person of Pythagoras (no doubt he noticed the famous thigh) he concluded that Pythagoras was the Hyperborean Apollo incarnate. This is just another proof of Pythagoras' divinity. It also reinforces the belief that the philosophy of the Pythagorean society centred upon a worship of the god Apollo. It is certain that for both Iamblichus and Porphyry Pythagoras was divine, if not a god, then a daimon, one of the lesser divinities. The Abaris story is introduced to substantiate this claim. The miraculous story about the arrow is attested in Herodotus, but the historian does not mention anything about its being used as a means of transportation. This idea of the flying arrow comes from Heraclides Ponticus. According to myth the arrow was enormous, having been used by Apollo when he fought with the other gods against the revolt of the giants. We have already seen that Heraclides was not a very reliable source so that we may dismiss the idea of the flying arrow. It was also said to have been used by Abaris as a sort of compass during his travels.

About 512 B.C. a revolution occurred in Croton's northern neighbour Sybaris. The oligarchic faction which had hitherto

ruled that city was exiled and a tyrant named Telys assumed control. The Sybarite oligarchs fled to Croton where they received shelter as suppliants in one of the temples. The Sybarites sent envoys to Croton demanding that the oligarchs should be surrendered to them. Here Pythagoras intervened and persuaded the Crotoniates not to give up the exiles. The main reason for this decision of Pythagoras was the fact that the envoys, or at least some of them, had killed some of his followers in Sybaris. This does not necessarily indicate the existence of a Pythagorean society in Sybaris or that the Pythagoreans had any real power in that city; it merely shows that the members of the Crotoniate society had visited Sybaris and were murdered there by the followers of the tyrant Telys. Iamblichus describes this situation as follows:

> I shall relate what Pythagoras said and did in relation to the embassy from Sybaris to Croton to demand the return of the Sybarite exiles. The Sybarite envoys who came to Croton had killed some of his followers; one envoy had actually helped in the killing, another being the son of a Sybarite revolutionary who had since died from some indisposition. The government of Croton did not know how to handle the situation. Therefore Pythagoras said to his disciples that he did not want the people of Croton to disagree with him greatly; but he did not approve of conducting animal victims to the altars where they were suppliants. The Sybarite envoys came up and rebuked him. Pythagoras answered that it was not right to reply to the accusations of a murderer. Then the envoys accused him of calling himself Apollo because Pythagoras, when asked concerning some problem the question: 'Why is that?' had in turn asked the questioner if he thought that when Apollo gave his oracles the god had to give a reason. Pythagoras replied to another envoy who had ridiculed his doctrines, especially the idea of the return of the psyche from hell to earth once more. The envoy said that he would give Pythagoras a letter to take to his father when Pythagoras was going to descend to Hades and bade Pythagoras get a reply whenever he felt like coming back from his [i.e. the envoy's] father. Pythagoras answered that he was not going to stop off in the place where the ungodly were; where he was sure that murderers like the envoy's father were

> punished. Then the envoys abused him. He went off to the sea and washed himself surrounded by his followers.[2]

In this way Pythagoras persuaded the Crotoniates to refuse the return of the exiles to Sybaris. The refugees were taken from the altar on Pythagoras' advice and kept in a safer place where the envoys could not get at them. There is no need to doubt the historical truth of this intervention on Pythagoras' part in the politics of the Italian city-states. The reasons Pythagoras had for taking sides were personal and religious, not political. The Sybarite envoys were impious murderers who should not be allowed to take the exiles back to Sybaris where certain death awaited them. Pythagoras' superior attitude toward the envoys is symptomatic of his belief in his own divine message. In this passage he hints that he is in fact Apollo, and in the whole of Iamblichus' narrative nothing contradicts the impression. To free himself from the pollution of being near the Sybarites he goes and washes himself in the sea, again revealing his obsession with purification. After Pythagoras had advised the government of Croton not to surrender the exiles, the Crotoniates dispatched an embassy to Sybaris to tell the tyrant Telys of their decision. The Sybarites massacred the Crotoniate envoys, an unforgivable offence in the eyes of the Greeks. From then on the fate of Sybaris was sealed. The goddess Hera appeared in the market-place at Sybaris spewing bile to signify her wrath against the impious Sybarites; blood flowed in her temple, and the Crotoniates declared war on Sybaris. These divine portents were seen as a confirmation of a divine curse which had rested on Sybaris since its foundation. The Sybarites assembled an army of about 300,000, whilst the Crotoniates only managed 100,000. These figures are obviously an exaggeration for the citizen population of the respective cities could not have been very much larger than these totals. The battle resulted in the defeat of the Sybarites, it being rumoured that the Crotoniates had flute-players in their ranks who threw the Sybarite cavalry into confusion. The city of Sybaris itself withstood a siege of some seventy days and then surrendered. The tyrant Telys and his followers were slaughtered by the victorious army, and the city of Sybaris was razed. The river Krathis was diverted to flow over the ruined city. Sybaris vanished from the face of the earth. The Sybarite territory was then incorporated into the Crotoniate state.

It has been suggested that Pythagoras' moral reforms at Croton helped that city defeat the Sybarites by rousing the people of Croton from their luxurious torpor. This hardly seems likely since Croton was never a very rich city, and luxury was not rampant there as it was in Sybaris. The Sybarites were probably demoralized from the start and frightened by the rumours of divine wrath. Wealthy cities like Sybaris were notoriously easy to defeat because their citizens were unfit for the rigours of war. Croton had always been a city famous for its athletes, and it is no coincidence that the most famous of these, Milon, also a follower of Pythagoras, was the commander of the Crotoniate forces. The Pythagorean society at Croton was relatively small and had no such overwhelming influence as to be able to determine the result of the war. Likewise Pythagoras' decision to protect the Sybarite exiles was only an indirect cause of the conflict, the Sybarites themselves being to blame for their defeat. This war took place in about 511–510 B.C., Pythagoras having been in Italy for nearly seven years. During that time he had established his reputation so that even Sybarite envoys knew some of his doctrines. Thus the secrecy of the society must not have been all that strict if key doctrines were known far and wide. The incident of the Sybarite envoys also points to missionary activity on the part of his followers who were apparently murdered at Sybaris because they offended the Sybarites in some way. This is the first sign of persecution of the Pythagoreans in Italy. It did not bode well for the future because soon after the victory of Croton over the Sybarites a persecution of the society broke out in Croton.

The details concerning this persecution are very vague. The chief cause of this confusion and vagueness is the fact that writers on Pythagoras like Aristoxenus, Nicomachus and Apollonius have confused two separate persecutions of the Pythagoreans at Croton. The first of these occurred in 508 B.C. or thereabouts, the second taking place about fifty years later in 460 B.C. The second persecution appears to have been precipitated for political reasons, the Pythagoreans having since the death of Pythagoras become political. They are depicted in the work of Polybius as advocates of an aristocratic form of government against which the people of Croton together with other Italian cities revolted to set up Achaean-type democracies.[3] This confusion was probably caused by the fact that the conspirators against the Pythagoreans

in this second persecution trapped the Pythagoreans in the house of Milon, the famous follower of Pythagoras, and burnt it to the ground. Only two Pythagoreans escaped: Lysis and Archippos. The house of Milon was obviously still standing in 455 B.C., but Milon himself would have been long since dead. This second revolt led to most of the Pythagoreans leaving Italy and returning to Greece, mainly Thebes. Others regrouped at Rhegion and decided to stay in Italy. One must remember that after the second persecution there were many Pythagorean exiles, not just the two who escaped from Croton, but also others from the rest of South Italy and perhaps Sicily. By 460 B.C. there were many Pythagoreans in the other Italian cities, but in 508 B.C. the society was limited to Croton. In this narrative of the first revolt against the Pythagoreans only Aristoxenus is to be trusted for he states that the Pythagoreans had influence only in Croton, the other Italian cities having refused to help them.[4] The fact that such a confusion could take place indicates that not much is known for certain about the final years of Pythagoras in Italy.

First, one must establish a satisfactory date for the outbreak of the first attack on the Pythagorean society. There are two possibilities here: either 508 B.C. or around 500 B.C. The first date is based on the interpretation of events according to Apollonius of Tyana.[5] Apollonius believed that grievances over the distribution of the conquered land of the Sybarites led to the revolt of Kylon against the Pythagoreans. This must have happened a few years after 510 B.C., the date of the war between Croton and Sybaris. Of course, Apollonius gave other reasons as well for this conspiracy against the Pythagorean society, but the distribution of land as an issue only occurs in Apollonius. The reasons for rejecting the testimony of Apollonius will be given presently so that here one can only state that the year 508 or a little later is unsatisfactory owing to the untrustworthiness of Apollonius' narrative of events. The alternative date of 500 B.C. has many things in its favour, and is adopted by von Fritz.[6] It does not depend on the argument over the distribution of land and agrees with other facts we know about the age of Pythagoras when he died. He was very old at the time of his death, which occurred after many wanderings in Italy, looking for a place of exile. He finally settled at Metapontium, and ascended bodily into heaven from the temple of the Muses, according to some sources.

The date of 508 B.C. or a little later would make him only sixty at the time of his demise, an age which is contradicted by many ancient authorities. If the conspiracy took place in 500 B.C. the date of his death would be postponed well into the fifth century, being more in conformity with the facts.

The first revolt against the Pythagoreans is usually interpreted as a popular rebellion of democratic elements against the so-called aristocratic stance of the Pythagorean society. This is the interpretation of Dunbabin who describes the revolution as follows:

> The Kylonian movement may be interpreted as due to a combination of democratic elements discontented with concentration of privilege in the hands of the rulers and some of those rulers who were opposed to the activity of the Pythagorean clubs.[7]

The explicit assumption of this interpretation is that the attack on the Pythagoreans was political; furthermore, it supposes that the Pythagoreans were involved in politics. It is also fair to object that there was not more than one Pythagorean society, and the equation of the Pythagoreans with other political clubs is unfortunate. It has already been shown that the society was neither aristocractic nor primarily political. Thus the society was not a political club and did not wield any political power. As to the question whether the revolt was democratic, one can only point to sources such as Aristoxenus who describe the conspirators in anything but democratic terms. The interpretation of events according to Aristoxenus is as follows:

> There were some people who fought against these men [i.e. the Pythagoreans] and revolted against them. All the sources agree that Pythagoras was absent when the conspiracy took place, but differ as to his place of residence at that time; some say he went to Pherekydes of Syros [i.e. to Delos], others say Pythagoras went to Metapontium. Many causes of the conspiracy are quoted; one such cause being the followers of Kylon. Kylon, a Crotoniate and leading citizen by birth, fame and riches, but otherwise a difficult, violent, disturbing and tyrannically disposed man, eagerly desired to participate in the Pythagorean way of life. He approached Pythagoras, then an

> old man ['presbyter', so that the date of 500 B.C. is again vindicated], but was rejected because of the character defects just described. When this happened Kylon and his friends vowed to make a strong attack on Pythagoras and his followers. Thus a powerfully aggressive zeal activated Kylon and his followers to persecute the Pythagoreans to the very last man. Because of this Pythagoras left for Metapontium and there is said to have ended his days.[8]

From this summary of Aristoxenus' views concerning the first persecution of the Pythagoreans it appears that personal vengeance played a leading role. Kylon had been rejected by Pythagoras and so stirred up animosity towards him and the society. Kylon and his followers could hardly be termed democratic for they were rich and of good birth. However, they may have turned the populace against the Pythagoreans by perverting some of Pythagoras' teachings. This is in fact the version of Apollonius who states that Kylon was a demagogue who faked a *Sacred Discourse* of Pythagoras in which the people were termed cattle to be ruled by their Pythagorean masters.[9] But the leading opponents of the Pythagoreans remained the followers of Kylon who were discontented nobles. It is noteworthy that Aristoxenus does not mention any distribution of land as an issue, but concentrates on the factional animosity of Kylon. Pythagoras apparently knew what was coming and departed for Metapontium, hoping that his absence would curb the wrath of Kylon. This was not to be, for Kylon continued his agitation. The composition of the Pythagorean society is not explicitly stated by Aristoxenus so that one cannot say that it was aristocratic. We have already seen that noble birth was not a prerequisite for membership. Thus the main reasons motivating Kylon and his followers were personal and not political. They may have been jealous of the indirect influence of the Pythagoreans on politics, but if they really wanted to oust the Pythagoreans from political power, and the Pythagoreans were of noble birth, there would have been a civil war among the citizens of Croton, for the families of the Pythagoreans would not have stood by and watched the persecution. This is in fact what happened for none of the citizens helped the Pythagoreans so that one must conjecture that they were not of predominantly noble birth. The persecution may have had religious overtones,

Kylon and his followers being envious of the way of life of the Pythagoreans. The Pythagoreans isolated themselves from the rest of the city, and their obsession with purification may have alienated the people. The Kylonian persecution is more likely to have been religious with some political and personal overtones. Apollonius of Tyana takes an overtly political view of the Kylonian revolt, believing that the Pythagorean society at Croton was aristocratic and politically engaged:

> Since to some extent Apollonius disagrees about the same events, adding many details of his own, let us include his description of the conspiracy against the Pythagoreans. He states that right from childhood the envy of other people pursued Pythagoras. People were happy as long as Pythagoras spoke with everyone who approached him; they felt slighted as soon as he met with his disciples only. They acquiesced in being inferior to Pythagoras who was a foreigner, but they hated it when their fellow-citizens [i.e., the members of the society] seemed to reap greater rewards than they. They considered that the society was against them since the young men in it were superior in wealth and honours. As the young men got older they not only excelled in their private lives, but ruled the city in common, increasing the membership of the society [there were over 300], still a small part of the city's population, a population which could not share in the manners and pursuits of the Pythagoreans. The Crotoniates continued to possess their existing territory even when Pythagoras arrived. The age-old condition of the people remained after the synoecism [the union of Croton's territory with that of conquered Sybaris]. This condition was displeasing, and the people were awaiting the opportunity of changing it. When Croton subdued Sybaris, and Pythagoras left [for Metapontium or Delos?], and the land acquired in the war was colonized, the subdivision of this land was not to the liking of the people. The hatred which had been quiescent broke out, and the masses revolted against the Pythagoreans. The leaders of the rebellion were people similar in rank and birth to the Pythagoreans.[10]

Is this version of Apollonius historical? Apollonius was a late author, writing in the first century A.D. and was a Roman citizen

of wealth. Iamblichus admits that Apollonius had many original things to say about the revolt against the Pythagoreans, but no sources for these opinions are given. One is led therefore to believe that Apollonius invented many of these details to concur with his own conception of Pythagoras and the society. Being a wealthy aristocratic Roman of Hellenic speech Apollonius would naturally assume that the Pythagorean society was open only to members of the aristocracy. He would not have liked the stories of slaves having shared in the teachings of Pythagoras; thus Apollonius states that the society's members were young aristocrats who led lives superior to the rest of the people. Such a situation naturally led to envy and a popular revolt, especially since the Pythagoreans were also the ruling class. Apollonius rejected the more ancient and authoritative testimony of Aristoxenus in favour of a modernized interpretation of his own. Kylon now becomes a popular demagogue who arouses the populace with spurious Pythagorean doctrines, no mention being made of Kylon's personal grievance against Pythagoras and the society. The main reasons for the revolt in the eyes of Apollonius are popular ill-feeling and an unfair division of conquered land. The episode of the land is Apollonius' own invention, probably modelled on the precedents of popular revolts over land he found in Roman history. There is no other evidence of such an issue in the other writers on the Pythagoreans so that one can assume that it is a fiction of Apollonius. If this is the case, then we are left with Kylon and the envy of the Pythagoreans on the part of the people. This envy was directed towards the exclusiveness of the society, not against its political activities. The people of Croton may have tired of the presence of the society and wished to be rid of it and Pythagoras. Thus they did not attempt to help Pythagoras and his followers when the storm broke and Kylon revolted.

A brief summary of the details of the subsequent revolt is as follows. Fighting broke out between the followers of Kylon and the Pythagoreans until the society fled into exile. Many of the sources confuse the two revolts against the Pythagoreans. Porphyry, for instance, states that the Kylonians burnt down the house of Milon in which the Pythagoreans had assembled.[11] The Pythagoreans formed a living bridge over which Pythagoras walked to safety. However, some sources assert that Pythagoras was caught and slaughtered by the Kylonians when he stopped

in front of a field of beans which barred his path of flight. This and similar stories of the death of Pythagoras may be dismissed as absurd fictions. Pythagoras had anticipated events and prudently departed for Metapontium before the actual fighting broke out. Before he had been allowed to settle at Metapontium he apparently was rejected by many other cities on his way. Thus Kaulonia, Locri, and Tarentum refused to have Pythagoras living amongst them. This again proves that the original society at Croton did not have branches in other Italian cities. Most of the sources state that Pythagoras committed suicide in the Temple of the Muses at Metapontium because he was disheartened by what had happened at Croton and was lonely and without companions. This would have occurred soon after 500 B.C., making Pythagoras about seventy when he died. This age for Pythagoras' death conflicts with many other ancient writers who contended that Pythagoras was ninety nine or one hundred and four when he died. There are also other problems associated with the version that makes him commit suicide in Metapontium soon after the revolt of Kylon.

First, one has to harmonize the many statements by ancient authors concerning the great age at which Pythagoras died. That Pythagoras lived longer than normal men was part of the myth surrounding his life. His longevity was usually ascribed to his eating of certain plants and his extensive medical knowledge. To have died in such ignominious circumstances in Metapontium, exhibiting a despair which was not warranted by the facts, is most unlikely. The society at Croton was not finished, for the revolt of Kylon was only a temporary set-back. The Pythagoreans soon after returned to the city and resumed their activities. Pythagoras would not have committed suicide until he had apprised himself of the developments in Croton. Things could not have been all that bleak for it did not take long for the Pythagoreans to assume their old position at Croton and to become involved in political activities which spread to the other cities of Italy. Iamblichus, of course, does not accept this version of Pythagoras' end, for he believed that the Kylonian revolt was a trifling affair which did not greatly interfere with Pythagoras' activities. According to Iamblichus, Pythagoras lived on well into the fifth century, having taught such well-known philosophers as Empedokles and Philolaus. In fact Iamblichus only mentions Pythagoras'

death in passing, saying that he lived to nearly one hundred years of age,[12] having bequeathed the leadership of the society to Aristaeus. Since Iamblichus considered Pythagoras to have been divine he does not divulge any details of anything so mortal as death, preferring Pythagoras to fade away into the mists of the fifth century. If Pythagoras in fact taught Empedokles, which is also attested by other ancient authors, then Pythagoras must have died well after 480 B.C., for Empedokles would have been a young man about that time. This version of Iamblichus concerning the subsequent fate of Pythagoras is more plausible because the sage was not a man to despair easily, especially not because he was lonely or friendless, for he had passed most of his life in exile in foreign lands with few friends. The more optimistic version of Iamblichus is more consistent with the later successes of the Pythagoreans in Croton and many other cities in Italy. If their leader had died so despairingly they too may have lost heart and been dispersed and destroyed forever. The story of Pythagoras' death at Metapontium is due to the confusion of the two revolts against the Pythagoreans. The second revolt was more serious and led to a great loss of confidence in the ranks of the Pythagoreans. If Pythagoras had been living in 460 B.C. when the second revolt took place, he may well have despaired and committed suicide at Metapontium. The suicide then is because Aristoxenus and Nicomachus confused the first revolt with the second, more serious one.

After the Kylonian revolt it is not known whether Pythagoras ever returned to Croton, but one must assume that he did for the society once more became firmly entrenched in that city. The interruption of its activity could not have lasted more than a few years; but even after the end of Kylon and his followers and the return of the Pythagoreans to Croton the society did not gain political control of the government. In the 490s a tyrant called Kleinias ruled Croton. His rule probably began about 495 B.C. The real political activity of the Pythagorean society must have begun after the death of Pythagoras, in about 475 B.C. After Pythagoras saw the society returned to Croton he appears to have travelled widely in Italy spreading his teachings. He may have founded many branches of the society in Sicily and the rest of Italy. He died an old man having seen his way of life accepted by many in Italy.

The subsequent influence of this Pythagorean way of life must now be examined, for Pythagoras' death did not interrupt the continuing success of his society. Before beginning this last chapter in the fortunes of the followers of Pythagoras, it may be well to give a brief analysis of Pythagoras' character and its effect on the Hellenic world.

Numenius, a Pythagorean of the second century A.D., states that Pythagoras' character was sublime and tended to be exclusive and mysterious; thus we know little about his personal and private life. The letters and works attributed to him by antiquity reveal little of his life. He had a reputation in antiquity which, amongst philosophers, was rivalled only by that of Plato; but Pythagoras is really in the same class as Alexander the Great as regards fame.

Numenius thought that Plato was more human and convivial, for the Athenian philosopher held public lectures on Pythagorean theories and did not surround his school of the Academy with secrecy and mystery; and yet the character of Plato, as revealed in such works as *The Laws*, is not as humane as that of Pythagoras. That love of all life and rapport with animals and his fairness to slaves which Pythagoras possessed are notably absent from Plato and most of the other Hellenic sages, with the possible exception of Socrates. Pythagoras, being of foreign ancestry, also had closer affinities with the barbarians, so that his message was more cosmopolitan than that of Plato who was too narrowly constricted in the milieu of Greece. Pythagoras had followers who were slaves and barbarians and he was not concerned with establishing totalitarian regimes in Greece as was Plato. The divine had touched Pythagoras in a way that elevated him above the other Greeks. Pythagoreanism suffered later when it became too closely associated with the philosophy of Plato, for the character of this sage was limited and far weaker than that of Pythagoras. Moreover, one perceives in some of Plato's works an inhuman cruelty which would have shocked Pythagoras. The prejudices of Plato were later seized on by the Christians who proclaimed him one of their own. It is noteworthy that they never revealed any similar sympathy with Pythagoras. On many issues Plato is ambiguous so that many misinterpretations of his work have resulted. Pythagoras' doctrines only alienated Judaeo-Christian civilization. The most glaring example of this is rein-

carnation which has no place in Western traditions except as an oddity. This Pythagorean doctrine is the one which embraces all the various differences between the occult Pythagorean tradition and the official culture of the West. For Pythagoras man was intimately linked with the rest of the animal kingdom and did not enjoy any innate superiority over the other animals. Man was not the image of the divine, but a living being whose only distinguishing characteristic was his greater ability to be trained and participate in intelligence. The real man was not his body, but the psyche. Of course, the other animals could be trained, as Pythagoras demonstrated in the case of the Daunian bear, and some men were capable of approaching the reality of the divine numbers by a rigorous programme of training and education, but man was still a member of the animal kingdom with none too many privileges; even his speech was not unique for Pythagoras contended that he could understand the language of animals. The human is an animal which must shed this base origin by purification and training in order to join the psychic forces which pervade the cosmos and which appear in all the various forms of life. This psychic survival is not impersonal and pantheistic, but individual and personal as can be seen in the action of the psychogonic cube which projects the psyche of Pythagoras into birth every 216 years; thus there is individual survival. The gods are remote beings resembling numbers or abstract things like justice or beauty which men must imitate in order to cease being human and become divine. This involves a purification of the psyche which has an existence independent of the human animal so that the psychic self must become like the divine numbers or gods and not be yoked to a sick and dying animal. Resemblance to a god also allows the psyche to escape from reincarnation and all animal forms; thus Pythagoras believed that the divine psyches inhabit the Milky Way in star-like forms. These resolute beliefs of Pythagoras could never be reconciled with the official view of things so that any overtly Pythagorean writings were destroyed or mutilated. The works of Archytas, Philolaus and the numerous other Pythagoreans have been lost; but the more elusive Pythagorean writings, say of Plotinus, escaped this fate because the official Roman and Byzantine government and religion used him as propaganda. Needless to say the character of Pythagoras was an object of contempt amongst these people so

that the more reliable of the biographies were burnt along with the antagonistic writings of Porphyry. Our task, therefore, in giving an outline of Pythagoras' life has been greatly impeded, but enough emerged concerning him to ensure him a unique place in the history of thought.

TEN

THE HERITAGE OF PYTHAGORAS

The later history of the philosophy of Pythagoras is complicated because it became confused with the school of Plato. Other philosophical sects also borrowed many of Pythagoras' ideas, but did not acknowledge it. This and other problems are the result of the secrecy surrounding the teachings of the master. Even though Pythagoreanism suffered periodic eclipses such as the revolt of Kylon and the later more serious one of 450 B.C. when the society in Italy was dispersed, as a movement true to the original teachings it continued in Italy until about 300 B.C. Aristoxenus was in touch with the last Pythagoreans in Italy who formed a society in Tarentum which was the direct successor of the one in Croton. After that Pythagoreanism is the history of individual Pythagoreans who lived wandering ascetic lives in Greece during the third and second centuries B.C. Of course, throughout this Hellenistic period of Greek history isolated Pythagoreans like Okkelos still published works, but as a society the Pythagorean movement had ceased. The third and second centuries were also a barren time for Platonism whose followers, called Academics, had now become sceptics and rejected the metaphysical and Pythagorean elements in the teachings of Plato. Hellenistic philosophy was dominated by the materialist sects of Stoics, Epicureans and Peripatetics, and it was not until the first century B.C., when the Romans had nearly completed their conquest of the Hellenistic kingdoms of the Greeks that Pythagoreanism once more became a dominating force within the nascent Roman Empire. Many of the traditional oriental religions had meanwhile been influenced by Greek philosophy, especially that of Pythagoras, so that they tended to defend irrational beliefs by rational arguments taken from Pythagoras and his followers. The case of Alexandrian Judaism

is a classic example, the original beliefs of which were buttressed by Philon of Alexandria with Pythagorean numerology and cosmology. The ancient Egyptian religion likewise turned to Pythagoras, and the writings ascribed to Hermes Trismegistus are full of Pythagorean ideas.

In Rome itself Nigidius Figulus revived interest in the philosophy of Pythagoras because of its early connexions with Rome and the ancient inhabitants of Latium. Roman nationalism is also linked with Pythagoras in the *Metamorphoses* of Ovid who gave a long account of the Pythagorean theory of reincarnation. By the first century A.D. the revival of Pythagoreanism had been accomplished so that it was vying with the other mystery religions for a predominant place in the Roman Empire. Archaeology has unearthed Pythagorean chapels in Rome, places where initiates were taught about the mysteries of Pythagoras and introduced to the worship of Apollo as the One. These secret societies employed drugs such as opium in their initiation ceremonies in order to induce states of bliss and supernal ecstasy. The symbolic name for these hallucinatory unions with Apollo was the leap from Leukas (cf. J. Carcopino, *De Pythagore aux apôtres*), an island sacred to Apollo in Greece, having a famous cliff from which the poet Sappho leapt to her death. In the first century A.D. also there lived Apollonius of Tyana who claimed to be an avatar of Pythagoras, another manifestation of Apollo on earth, but had misunderstood many teachings of the master. He and Nicomachus of Gerasa (whom Proclus proclaimed as an incarnation of Pythagoras, perhaps justly) wrote biographies of Pythagoras in order to revive interest in the sage, Nicomachus living in the second century A.D. In the same century came Numenius of Apamea who must be credited with being one of the founders of a revived theoretical Pythagoreanism, following in the footsteps of Moderatus, Kronius and Thrasyllus. Numenius maintained that Plato was just another Pythagorean and so combined the teachings of these two great philosophers. The third-century followers of Numenius, Plotinus and Amelius, helped to clarify many of the metaphysical theories of Pythagoras by using many of the writings of Plato as a guide. Whether Plotinus and his followers, especially Porphyry, should be classed as disciples of Pythagoras or Plato is one of the problems in the history

of Greek philosophy. Are they Neopythagoreans or Neoplatonists? Judged from their own lives and their writings they must be classed as Pythagoreans for their whole purpose was to revive an interest in Orphic-Pythagorean mystical ideals to counter the rising sects of Christians, Gnostics, Manichees and the host of other oriental cults now mushrooming everywhere in the Roman empire. After the Christian groups gained control of the state in the fourth century A.D. the Pythagoreans gradually became a persecuted minority, but the ideas of Pythagoras were still taught in the ancient school of Plato, the Academy of Athens, and at Alexandria, until well into the sixth century A.D. when Justinian, the Eastern Emperor, closed the Academy and forbade the teaching of philosophy and pagan doctrines. Some of the leading pagans and Neoplatonists went into exile in Persia where the religion of Zoroaster still held sway, but could not stand living there although they were honoured by the Persian king. They finally persuaded the Iranian monarch to force Justinian to tolerate their beliefs so that they could return to Greece. This demonstrates that the doctrines of Pythagoras were openly taught for a period of 1,200 years from the sixth century B.C. to the sixth century A.D. after which the Dark Ages swallowed nearly everything up. At Byzantium, however, there were many secret pagans who preserved the old values which re-emerged at the Italian Renaissance when a Byzantine named Pletho announced the return of the ancient gods in his work entitled the *Laws*.

First we must examine the fate of the original Pythagorean society at Croton and trace the influence it exerted on later Greek schools of philosophy. Then the influence of key-doctrines on later followers will be briefly examined. The Pythagorean way of life will also be discussed together with its historical importance in the formation of the religious sects of the Roman Empire. According to Iamblichus Pythagoras lived until he was ninety-nine, having led the society at Croton for thirty-nine years. He must have died shortly after 480 B.C., having established the society at Croton in 518 B.C. The immediate successor of Pythagoras as head of the society was Aristaeus of Croton who was already an old man when he assumed this responsibility. He did not lead the society for long

so that the son of Pythagoras, Mnemarchus (or Mnesarchus, named after his grandfather as was the Hellenic custom), took over the leadership. After Mnesarchus came Boulagoras, who lived through a particularly trying period in the history of Croton which was sacked during his lifetime. He was followed by Gartydas of Croton who died of grief at the misfortunes Croton suffered at this time. Iamblichus, who is our chief authority for this history of the later society, may here be alluding to the revolution in many Italian towns against the influence of the Pythagoreans who were replaced by democratic forms of government for a time. If this is true, Gartydas probably led the society at Croton in about 455 B.C. After this date the society was banished from Croton and its membership dwindled in numbers. Many of the Italian Pythagoreans, such as Lysis, left for Greece. Lysis went to Thebes in Boeotia and became the teacher of Epaminondas, the Theban general who defeated the Spartans. A Pythagorean enclave was also established at Phlius in the Peloponnese which had close contacts with Socrates, the teacher of Plato. Other members of the society regrouped at Rhegion in Italy and decided to stay on. These included Philolaus and Archytas, the latter becoming a powerful political figure in Sicily; he later helped Plato when the Athenian philosopher fell foul of the tyrant of Syracuse, Dionysius.

After the demise of Gartydas of Croton a foreigner named Aresas from Leucania took over the leadership of the society which was no longer located at Croton. Owing to the lack of members Aresas allowed anyone to join so that the society was now in a state of decline. Apparently Philolaus and Archytas were not full members of this declining organization for they chose to publish many of the ideas of Pythagoras, although they expressed them in an enigmatic way so that nobody profane could decipher them. Philolaus was hard-pressed for money at one time so that he sold his works containing Pythagorean doctrines to all and sundry. The remnants of the society survived at Tarentum until about 300 B.C., and it was upon this society that Aristoxenus based many of his judgments about the original society at Croton. Most of the original minds had left Italy, or like Philolaus and Archytas, preferred to stay outside the pale of the society so that they could publish

their works. The sheep which remained in the fold at Tarentum were probably akousmatics who still paid lip-service to the doctrines of Pythagoras, but did not understand them. If one takes Aristoxenus' account literally, they are also likely to have been rather lax followers for they apparently ate meat and drank wine. The wandering 'Pythagoristai' or ascetic Pythagoreans who were ridiculed so much in many of the Greek comedies of the fourth and third centuries were still true to the vegetarianism and other doctrines of the master. Like Pythagoras they had no place in society and lived from day to day by begging. The archetypal Pythagorean had always been a social outcast for Pythagoras himself had severed all ties with family and friends on Samos and taken to a life of wandering until he finally settled for a time at Croton to fulfil his destiny. Later Pythagoreans also tended to disassociate themselves from their pasts until this tendency became most extreme in the case of Plotinus, who refused to tell anything about his race, parents or homeland. This is just another reflection of the extreme individualism of the ancient Greeks who were not chained down by family, tradition or religion or even the necessity to work. The Pythagoreans lived simply and as wanderers could adhere to the rules of Pythagoras without the need of a formal community life. They recognized each other not only by their long hair and ragged appearance, but also by secret signs. They would often leave symbols by the road telling any of their wandering associates where a free bed and lodging were to be had. These wandering Pythagoreans came into their own during the social upheavals and wars of the Hellenistic period in Greek history when the Greek states reduced each other to penury and finally to Roman domination. Other philosophical sects like the Cynics also took to this life of wandering and poverty, but they were even more extreme than the Pythagoreans.

It is true to say that the message of Pythagoras became international and exerted a profound influence on the peoples of the Mediterranean during the period of the wandering Pythagoreans. Oriental peoples like the Jews, a very traditional and communal people, were even influenced by the Pythagorean way of life. The more adventurous Jews founded communal organizations like the Essenes who copied many of the mannerisms of the Pythagoreans. They had their goods in

common, practised a form of sun-worship and employed a simplified numerology. In Egypt similar sects became prolific until in the fifth century A.D. the Egyptian desert was filled with these wandering ascetics who called themselves hermits, but who really lived together. Amongst the more famous of the early sects were the 'therapeutai'. These wandering Pythagoreans and their oriental zealots were an anti-social phenomenon and most of their recruits came from the lower strata of society. The Pythagoreans were tolerated during the interregnum of the second and first centuries B.C. when Roman power was gradually taking over the remaining Hellenistic kingdoms for anti-social elements could still escape the totalitarian power of the Roman state by going to Syria or Egypt or the independent kingdoms in the Near East. During the latter half of the first century B.C. and the first century A.D. Roman power became absolute in the Mediterranean so that the Pythagoreans had to become respectable or perish in a Roman slave camp or on the latifundia of Sicily. Some Roman intellectuals made Pythagoreanism more respectable at Rome by linking it to the early years of the Roman state when legendary kings like Numa ruled the people of Latium. This campaign led by Nigidius Figulus and Ovid had some success, but the Romans still remained hostile to Pythagoreanism and Greek philosophy which had anti-social tendencies. They tolerated the Stoics because these materialists emphasized duty and active virtue which could be harmonized with the Roman ideals of patriotism and imperialism. But the Romans still hated the long hair and beards of the Greek philosophers whom they branded as degenerates and corrupters of youth. The Roman emperors had periodic purges of philosophers, crucifying any they could lay their hands on and banning them from entering Rome. Nero and Domitian are prominent here. One of these persecutions nearly put an end to the career of Apollonius of Tyana, but he defied the tyrannical Domitian, and just as the tyrant was about to lay hands on him, vanished into thin air and turned up the same day in the south of Italy. This disappearing trick of Apollonius is modelled on Pythagoras' miraculous and simultaneous appearance at Croton and Metapontium on the same day. Apollonius was of a respectable family and had money, but his long hair and papyrus sandals and other

Pythagorean peculiarities alienated the emperors. The case of Apollonius proves that Pythagoreanism was becoming fashionable amongst the higher social classes.

Nevertheless, many of the Pythagoreans of the early Roman Empire remained social outcasts who met secretly in the houses of wealthy followers at Rome. During the first century A.D. and after the empire became riddled with secret societies which the Romans persecuted with all their might. Since drugs played an important part in the rituals of these societies, including the enclave of Pythagoreans at Rome who worshipped Apollo of Leukas, the Roman government banned such things as nepenthe and opium to check their activities. The Roman ban on opium was also stimulated, according to Pliny the Elder, by the growing number of Roman nobles who mixed gigantic quantities in their wine in order to commit suicide in the most pleasant manner possible. This ban was not upheld because the drug was too deeply entrenched in the lives of the citizens of the empire. However, the Romans continued to outlaw many other substances. The Romans were not successful in these oppressive measures, and the secret societies gradually ruined the empire until one of them took it over. The Jews within the empire were continually revolting, and many of these rebellions, like the one at Cyrene, cost hundreds of thousands of lives.

During the second century A.D. the revived Pythagoreanism in close association with the school of Plato began to clarify the theoretical ideas of Pythagoras concerning numbers and the One. Pythagorean mathematics and music were given a new impetus by the writings of the Pythagorean Nicomachus who also wrote a biography of Pythagoras. The leading figure in the Pythagorean revival of the second century is undoubtedly Numenius, who regarded Plato as a Pythagorean and combined many of Plato's doctrines with those of Pythagoras. Nevertheless, Numenius still called himself a Pythagorean and so did all who mention him in their writings. In Numenius we have a rational account of how numbers and the Platonic forms or ideas (which were originally an invention of Pythagoras and Pherekydes, as Plotinus well knew) can be regarded as gods. There are three basic gods in Numenius which correspond with the characteristics exhibited by the first three digits in the arithmetical series. The One is the source of number, and was hailed

by Numenius as the supreme reality. From the One or immobile intellect the dyad or demiurge divides itself to become a duality (I and I); the dyad creates the cosmic psyche which is the beginning, mean and end of the cosmos like the number three (Plotinus alludes to the same Pythagorean doctrine at II 9, 17, 12–13, H.S., vol.I, Oxford, 1964). Numenius was a true follower of Pythagoras and stated that there were four levels of reality, another version of the sacred tetraktys. The One, the creative intellect and the cosmic psyche were the three main entities in the system of Numenius, but there was also a fourth, physis or nature, which completed the tetraktys of the Pythagorean philosophy. Of course, Numenius was not the first to elaborate the metaphysical doctrines concerning the tetraktys for already in the first century A.D. Moderatus of Gades had insisted on a four-fold interpretation of reality. These speculations of Moderatus and Numenius were taken up by Plotinus, Amelius and Porphyry during the third century and given a definitive expression.

We have already briefly touched upon the problem of whether these third-century thinkers should be regarded as Pythagoreans or Platonists. It is fair to say that the metaphysical doctrines of Plotinus are Pythagorean in origin and treatment and so it is legitimate to include him amongst those who shared the fortunes of the later Pythagoreans. In antiquity it was a common-place to include Plato and even Aristotle among the successors of Pythagoras' society; thus Plato is termed the ninth successor of Pythagoras as head of the Pythagorean society and Aristotle is tenth. Although Moderatus charges both Plato and Aristotle with gross plagiarism from Pythagoras and his followers, it is reasonable to reject Aristotle as a follower and successor to Pythagoras, for Aristotle has few Pythagorean ideas and his philosophy is diametrically opposed to that of Pythagoras. With Plato the case is different, for many books have been written examining the Pythagorean elements in his philosophy which predominate over the other influences. Plato's Academy had many features which were similar to the society of Pythagoras at Croton. It was a philosophical and mystical organization; Plato lectured for nothing, admitted women as members and believed in the divinity of numbers and the importance of the One which he equated with the abstract

idea of Good (not God). There were many differences, however. Plato did not believe in secrecy for he gave public lectures on the One or the Good and revealed many features of Pythagorean mysticism. He and his followers drank wine as they talked philosophy, and the atmosphere was apparently more easy-going than the inner circle of Pythagoras. Above all Plato was not regarded as a god, although some of his later followers toyed with the idea that Apollo had visited his mother Periktione before his father; and there is a bust of the philosopher from Pompei which depicts the philosopher with long hair tied in a head-band like the god of the unshorn locks or Apollo. Plato may not have taught the Pythagorean doctrine of ecstasy whereby communion with the One or Apollo is attained. He did not claim to be able to hear the cosmic music, and his mind was far more political than mystical. Whereas Pythagoras believed in mystical ecstasy and would take the juice of the poppy to attain it, Plato was more mundane and dependent on terrestrial reasoning. This rationality took the form of the dialectic which was largely concerned with defining things such as man or other animal or plant life. Abstract ideas assumed an important role here. Plato then applied the dual nature of man, the rational animal and two-legged creature, to the realm of the intelligible numbers and associated the idea of man with the dyad in the sacred decad of the Pythagoreans. Plotinus does the same thing (VI 6, 16, 20f). Rather boring examples of this cerebral exercise can be seen in such dialogues as the *Sophist* or *Politicus* for those who are interested. These dialogues are so boring that even scholars for a time denied that they could have been written by Plato; but the dialectic of Plato is firmly attested by reliable ancient authors. In Plotinus, however, the dialectic is interfused with the Pythagorean doctrine of ecstasy and becomes a vehicle for the attainment of the divine and the One beyond it.

In most respects Plotinus and his followers tended to interpret Plato in a mystical and Pythagorean way. They seized on his myths and mystical interludes as being divine revelations. They did not lose sight of reason, but as in the case of Pythagoras it is a reason subordinate to mystical ecstasy. They fell under the spell of Plato's great name and used it to support their own mystical ideas which had more in common with the Orphics and

Pythagoras than Plato. Since Pythagoras had not revealed his secrets in writing they could not quote him so that they did the very next best thing and quoted dialogues and passages from Plato in which they knew that Pythagorean mysticism was contained. They were lucky to have Plato for, according to Numenius, he was more philanthropic and generous than Pythagoras who had never divulged his secrets to the common man; yet even Plato had reservations about committing his most profound doctrines to writing and in his dialogue *Phaedrus* he criticizes the invention of writing and the difficulties it creates for authors. The circle of Plotinus at Rome not only believed in Pythagorean ideas, but also lived like Pythagoreans. The parallels with the society at Croton have already been drawn so that it is unnecessary to repeat them here. In his personal life Plotinus was a Pythagorean: he was a strict vegetarian who believed in little sleep and refused to wash in a public bath; he was obsessed with purification and warns about food which obfuscates the astral body of the psyche; like Pythagoras he was a student of physiognomy and even imitated certain linguistic tricks of the Pythagoreans, calling his disciple Amelius Amerius, the Pythagoreans having called the tetrad tetlad. There were many other phonetic conjurings by the Pythagoreans to achieve secrecy; hence they secretly called the heptad or seven by its original divine name or septad by running the 's' in the word for six into the heptad in their recitations of the arithmetical series. Plotinus was above all secretive: he revealed virtually nothing about himself and had a secret pact with other pupils of Ammonius not to divulge any of the master's teachings. These are but a few of Plotinus' Pythagorean characteristics. It is sufficient to recollect that the ideal of Plotinus was to live in an ancient Pythagorean city which had been abandoned for generations. The Roman government hindered his fulfilling this dream, the Senate being still a conservative force in Roman politics of the time. The emperor Galienus was favourable to the project, but the conservative Senate rejected the idea. The Roman nobility may have had memories of the times when Greek philosophers were fair game for their predatory instincts which loved to fill the lists in gladiatorial and beast shows. The humorous and ironic fact about Plotinus and his circle was that Plotinus paid lip-service to the Roman ideals and even tried to reassure some

of his more mundane Roman followers that in the after-life they would remember their fatherland and family and friends. In the world bordering on the divine numbers they would still be Romans. Obviously Plotinus knew that this was impossible, but he could not afford to alienate any of the rich Roman politicians who were his daily bread or, since he rarely ate bread, his barley. He also supported the Roman government's persecution of the Christians and in a most un-Pythagorean touch of barbarity approved of them being killed in the amphitheatres for not worshipping the images of the gods (II 9, 9, 10f, where we read about the Roman Empire being a gymnasium or gladiators' barracks in which there are deaths, and 'if it does slaughter you, you have got what you want'). Porphyry in his biography of Plotinus mentions that philosopher's adroitness in avoiding making political enemies, for this would have spelled the end for him and he would have finished up in the amphitheatre which he often employed as an image of the struggle for existence in a world where dog eats dog. He rebuked the Gnostics and other revolutionary mystics for criticizing the *status quo* in which, he says, one can still lead a virtuous life.

Virtue in the Greek sense signifies an excellence which only free men can attain. In the Roman Empire of his day Plotinus knew that such achievement and excellence was impossible for the masses whose more articulate and intelligent members turned to Christianity and Gnosticism and the host of other revolutionary cults for leadership. Plotinus was not exactly a paid hack of the Roman government, but many of his treatises in the *Enneads* (literally the 'nines', number mysticism having governed the arrangement of the work, there being a reference to the sacral character of nine and perhaps the arithmetical method of casting out nines) are just apologies for the Roman Empire; hence Plotinus never condemns the amphitheatre and the barbarities committed in it, in contrast to a philosopher like Seneca; but we have already seen that he approves of these atrocities or at least is silent in his condemnation. Contrary to a widespread belief the *Enneads* have many political allusions. Perhaps Plotinus was right in defending the empire at this critical stage when the barbarians were pressing home on the borders. However, his approval of persecution and his insistence on every good state having its hangman can in no

circumstances be condoned. The Roman Empire could even brutalize men who imitated Pythagoras and Plato. Plotinus foresaw that with Christianity at the helm of government the Empire, and with it all the achievements of Greece, would be lost. In his defence of the empire Plotinus helped to stave off the final collapse for a century or two so that his rather compromising position in the houses of the rich can be excused. Plotinus' case is a classic example of how a mystical Pythagorean can become involved in politics against his will.

The later history of the revived Pythagoreanism which Plotinus helped to found is a sad story of men who refused to face reality and who could not express their pagan beliefs in freedom. Such authors as Proclus in the fifth century do not mention Christianity by name, alluding only to certain atheistic tendencies which have overtaken man, and still talk as though the gods were still able to be worshipped in their temples, many of which had been converted into Christian churches or torn down. Inspired by the numbers and numerical polytheism of Pythagoras the last pagan thinkers who did not dissemble still clung to the hope that another Julian, the famous reviver of pagan worship after the aberration of Constantine, would arise and banish the nightmare of Christianity forever. They were still waiting in the sixth century, but the doors had finally closed on free thought. To the end these belated followers of Plato and Pythagoras still believed in gods who were numbers and worshipped the One as the supreme reality, believing in reincarnation and the other typically Pythagorean ideas which Christianity had rejected.

Now we must examine a few of the Pythagorean philosophical and mystical ideas which consistently influenced later followers or zealots of the master. The most prominent amongst these ideas was the doctrine of the One, identified as it was with the god Apollo. Originally in Pythagoras the One was not a number, but the source of number. It was the origin of all the odd numbers and in this sense it was good, the opposite of the evil dyad or two. The One was also known as 'peras' or 'limit' and was associated with light and all the good opposites in the cosmos. Obviously the One for Pythagoras was the supreme reality, also known by the name Apollo whose avatar Pythagoras was. Later Pythagoreans, notably Archytas, who taught

Plato, added many new features to the interpretation of the One. Archytas was aware of the existence of an abstract entity which he termed 'matter', an idea which Pythagoras had not verbalized. The opposite of this matter in Archytas was 'existence' which he defined as being an unchangeable substance out of which were formed such things as numbers, geometrical shapes (eide) and abstract ideas like justice. This important definition of a cosmic dualism more sophisticated than that of Pythagoras or the Magoi, had immense consequences. If the numbers were like existence or essence, then the One, the source of number, must be something greater than existence. Archytas defined it as being beyond existence and hence not an object of rational thought, but of mystical intuition. Plato developed these mystical ideas of Archytas further and identified the One beyond existence with the Good, the source of all existence and all ideas. Plato symbolized the Good or the One by the sun, another proof that Apollo, the sun-god, was the Pythagorean name for the One. The Good was the source of Plato's ideas, abstract entities which existed apart from men's minds in a world of divine beauty and goodness. Although Plato describes a psychic journey into the world of ideas and employs mystical language to portray the ascent to the idea of the Beautiful, he never actually delineates an ecstatic vision of the One which became quite commonplace in such Pythagoreans as Numenius or Plotinus. In these late authors the One becomes an object of ecstasy in the transcending of mind so that the psyche becomes a unity identical with the One. This doctrine of union with the One was not an annihilation of the individual pysche, an absorption in the One, as it were, for the One is absolutely pure and cannot be contaminated by extraneous substances: it can neither be added to nor subtracted from. Hence the vision of the One could not annul the lower levels of consciousness which continued to function even when the psyche attained union with the One. This simultaneous functioning of a multi-layered consciousness is the Plotinian theory of the unconscious. Many of the later Pythagoreans used narcotics to deaden awareness of the body and the reason in order to attain this vision of absolute simplicity and leapt from the figurative rock of Leukas into the arms of Apollo. The language which Plotinus and Numenius employ also points to

the effects of opiates, an obsession with images of sleep and waking, twilight states of trance and ecstasy being characteristic of these authors. It must be remembered that drugs were only a means of escaping from the body, they did not in themselves produce the vision of the One; they only allowed the psyche to become aware of its own potentialities.

Another important idea in Pythagoras' philosophy was that of the dyad or two which symbolized all the evil in the cosmos. The dyad became identical with matter in Plato, an idea which he may have borrowed from Archytas. The dyad was also one of the creators of numbers, being not a number in itself. Source of all the even numbers, it was regarded by Pythagoras as evil, but in Plato and later Pythagoreans it was redeemed and at least became neutral; but being identified with matter it was still evil in one sense. The complicated thing about later Pythagoreans is that they believed in two dyads, matter on the one hand, and the creator of evenness and number on the other. As an abstract source of number it was good, but as the matter of the material world it was evil. In Plato the One and the dyad create what Plato termed 'essential numbers' or numbers which create the essence of abstract ideas; hence, since man was both rational and an animal, he was associated with the essential two. Plato believed that the ideas in what became known as the intelligible world, an immaterial and non-dimensional place beyond the confines of the physical world, were in fact numbers. Plato distinguished essential and arithmetical numbers, a distinction which some of his followers upheld; but some rejected it. Amongst those who repudiated it was Speusippus, Plato's nephew, who succeeded his uncle as head of the Academy. Plotinus and others supported this new idea of Plato. It must also be remembered that these essential numbers were gods, the most revered of which composed the sacred decad.

Similarly in later Pythagoreanism reincarnation was a central doctrine. Although Plato and Plotinus did not specify the period between incarnations as Pythagoras had done, the cosmic cycles were always expressed by specific numbers, such as the famous Platonic number in the *Republic*. The laws of Kharma also apply in the world of these Pythagoreans; thus if somebody was a murderer in one life, he would be reborn as a victim in his next incarnation. As in Pythagoras, the Milky Way and other distant

stars were favoured places for the good to be incarnated, whilst the earth and the other planets were less than ideal. The universe itself was a living animal, called by Plato and Plotinus a 'zoon', most of whose parts participated in some form of life. The stars and planets were living beings, gods, who were divine because their motions revealed intelligible laws which could be expressed mathematically. Unattached to any matter or spheres they moved freely in space in a circular orbit, once more proclaiming their divinity. The highest honour for a psyche in the eyes of Plato was for it to escape being reincarnated on one of the planets and to return to its native star where it could participate in the intelligence of its (astrologically determined) star of nativity.

Although Plato and the Pythagoreans of later times described the cosmic psyche in terms of melody and music, the cosmic music recedes somewhat into the background. Plotinus often speaks of the cosmos as a harmony, but the real abode of the music of the gods is the intelligible world beyond the three-dimensional cosmos. In describing the mystical journey to that world Plotinus bids the initiate wait until he hears musical sounds proceeding from the intelligible:

> If, for instance, someone were waiting to hear a desired sound, he would withdraw from other sounds and rouse his ear for the time when that paragon amongst auditory sensations should approach; so too on earth he should forgo listening to perceptible sounds, unless it is strictly necessary, and preserve the psychic faculty of apprehension pure and prepared to hear tones from on high. (V 1, 12, 15 f.)

Once he has heard those notes he is in contact with the intelligible gods (noetoi theoi) who are in reality the Pythagorean numbers whose relations or ratios (logoi) are the music of the intelligible. For want of a better name the intelligible world is heaven, while the music in it is the voices of the gods. There is no hell in Plotinus. The followers of Plato were not so fortunate because the Athenian philosopher specifies a limited sojourn for the wicked in a Hades where the psyches of the departed are tormented by fiery demons. However, in most cases this torment is of limited duration and the psyche returns

to the cycle of incarnations after purification. Hell for the majority of later Pythagoreans was simply a state when the psyche of the departed does not know what to do once it has been ejected from the body. It wanders in a twilight world of ignorance until it is automatically reborn again. Apollo's advice to mortals was 'Know thyself' (gnothi seauton) so that self-knowledge and knowledge in general assumed overriding importance. For the Pythagoreans knowledge meant success both in the physical and immaterial worlds.

We have already seen that secrecy was paramount in the society of Pythagoras at Croton. Although Plato abolished secrecy within his own school of the Academy, the habit of silence and secrecy never completely died out in other Pythagorean circles. This secrecy took many forms. The teacher of Plotinus, Ammonius Saccas, did not commit his esoteric views to writing and encouraged silence and secrecy among his pupils. Plotinus and two other followers of Ammonius made a pact of secrecy not to divulge any of the secret doctrines of Ammonius to others. Although this pact was later broken, Plotinus never specifies in the *Enneads* which of his ideas were inspired by Ammonius. Furthermore, he never once mentions his teacher by name, although Ammonius, a reconciler of Plato and Aristotle and perhaps a Pythagorean, was the chief influence upon his philosophy. Plotinus is also reticent on many other issues and often remarks on the dangers of revealing too much. Other Pythagoreans, Aristides Quintilianus for example, implore the god of the tetraktys to pardon them if they have revealed doctrines which should not have been manifested. Pythagorean secrecy lasted until the very end of antiquity and confirmed the belief of Pythagoras that his message was only for the few; thus Pythagoreanism never became popular. It always remained an esoteric philosophy the followers of which remained peculiarly isolated within society. They tended to be spectators of the festival of life, awaiting the opportunity for escape into the cosmic music and the intelligible. The Pythagoreans were always pessimistic about the three-dimensional world because they considered its creation a mistake, a result of the daring of the dyad. Even though this mistake was a necessary one, for it brought gods and numbers into existence as well as the cosmos, the best thing that a

Pythagorean could do was to avoid 'deepening the plane'. According to the *Chaldaean Oracles* these are the very words of Apollo, advising mortals not to form three-dimensional bodies as their psychic habitation for to deepen the plane was to create a solid.

This brief summary of the later fortunes of the society and ideas of Pythagoras demonstrates the influence he had on the course of ancient thought and history. It is a fitting monument to his achievement that his philosophy, although slightly modified and overshadowed by the august name of Plato, outlasted all the other philosophies of ancient Greece. When the Epicureans and Stoics had passed into relative oblivion there were still men in Greece who practised his rules of life and believed in his ideas. Pythagorean vegetarianism enjoyed a great vogue in late antiquity and Porphyry wrote a definitive account of its necessity for the philosophically minded. The numerical gods were still worshipped by Pythagoreans in the sixth century A.D., but during the Dark Ages their meaning was lost; even today they are a relatively unknown quantity. If Apollo, who knows the number of the grains of sand in the universe, is listening, he would be glad that Pythagoras and his gods have emerged slightly from the darkness.

NOTES

ONE: ORIGINS

1 Iamblichus, *De Vita Pythagorica*, ed. Deubner, p. 6.
2 Porphyry, *Vita Pythagorae*, ed. Nauck, 17, 1.
3 Diogenes Laertius, *La Vie de Pythagore*, ed. Delatte, viii, 1.
4 Iamb., *VP*, p. 7.
5 Porph., *VP*, 18, 2.
6 D.L. viii, 2.
7 Porph., *VP*, 18, 2.
8 D.L. viii, 1.
9 Porph, *VP*, 22, 11.
10 Iamb., *VP*, p. 8.
11 D.L. viii, 2.

TWO: THE PHILOSOPHERS

1 Porph., *VP*, 26, 19.
2 Ibid., 47, 18f.
3 D.L., viii, 2.
4 Porph., *VP*, 24, 15.
5 Ibid., 48, 4.
6 D.L. viii, 4.
7 *Theologumena Arithmeticae*, ed. Ast, p. 40.
8 I. Lévy, *Recherches sur les sources de la légende de Pythagore*, pp. 76-7.
9 Porph., *VP*, 18, 3.
10 Cf: Aristotle, *Metaphysics*, 987 a 16.
11 H. Diels, *Fragmente der Vorsokratiker*, vol. 1, Berlin, 1934, p. 83.
12 D.L. viii, 2.
13 Aristotle, *Fragmenta Selecta*, ed. Rose, Oxford, 1958, p. 135, (fr.6).
14 D.L. viii, 27.
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